CENTER FOR THE ENVIRONMENT

FY 1999

RESULTS REVIEW
AND
RESOURCE REQUEST (R4)

April 30, 1997

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PART 1
OVERVIEW AND FACTORS AFFECTING PROGRAM PERFORMANCE

Overview and Factors Affecting Program Performance

A. Program Overview

This Results Review and Resource Request (R4) describes the Center for the Environment"s (G/ENV) FY 96 progress and performance in helping partner countries sustainably manage the environment. G/ENV programs and results are based on one guiding principle: careful management of the environment is essential if investments in development are to yield sustainable benefits. Productive lands and waters are critical for food security. Clean and reliable energy production and use are essential for alleviating poverty and stimulating economic growth. Unpolluted air and potable water are fundamental to the health of children and adults. Furthermore, global environmental degradation, including the loss of biodiversity and the threat of global climate change, ultimately endangers the welfare not only of developing countries, but also of the U.S. and the rest of the world. For these reasons, G/ENV pursues three Strategic Support Objectives (SSOs) to promote sustainable natural resources management, sustainable urbanization and pollution prevention, and environmentally sound energy production and use.

In FY 96, G/ENV, under these three SSOs, generally achieved and in several cases, exceeded anticipated results. G/ENV provided catalytic funding, technical leadership, and technical support to USAID missions, host-country governments, international finance institutions, NGOs, and private sector firms to help accomplish the results that are detailed in Part 2 of this report and highlighted below:

- SSO1 promoted the protection and sustainable use of natural resources, principally forests, biodiversity, and water, which are vital to the economic and social development of USAID host countries. Our shared efforts helped conserve more than 10 million hectares of tropical forests, coral reefs, and other biologically important habitat in 32 countries. We also helped our customers make substantial strides in improving management of more than 4,500 miles of coastline in 10 countries. These results will help ensure the well-being of local communities and the productivity of such economic sectors as agriculture, fisheries, and tourism.
- SSO2 improved urban and industrial management and redressed poor living conditions in the world"s cities. Nearly 515,000 low-income urban families benefited by receiving access to improved environmental services and shelter. In addition, 298 industries in 11 countries implemented measures to prevent and control pollution; this number was substantially higher than the 132 industrial facilities targeted this year. As a result, decreased air and water pollution, combined with greater access to potable water, will improve public health.
- SSO3 promoted environmentally sound energy production and use. Our efforts leveraged $121 million in government, private, and multilateral bank investment helping to guarantee the economic sustainability of our energy objectives. The investments G/ENV supported avoided an estimated 2.3 million tons of greenhouse gas (GHG) emissions, decreasing local pollution and helping combat the threat of global climate change. In addition, our renewable energy activities helped bring clean energy to more than 500,000 homes and enterprises.

As part of our mandate, we provided strong support for United States Government foreign policy

initiatives. Center staff participated in various U.S. delegations, providing technical assistance on best practices in the environment, furnishing background documentation and analyses, facilitating participation of NGOs and private sector institutions, and disseminating information. - Highlights this year include the following:

- *UN Commission on Sustainable Development (CSD):* Participated in the U.S. delegation to numerous preparatory conferences, special meetings, and annual conference of the parties.
- *UN Framework Convention on Climate Change:* Assisted Missions in carrying out the U.S. commitment to the Global Climate Change Convention and represented the Agency in supervision of the U.S. Initiative on Joint Implementation and U.S. Country Studies Program.
- *World Conservation Union (IUCN):* Co-led U.S. delegation to triannual meeting.
- *Second UN Conference on Human Settlements (Habitat II):* Co-led and provided technical and financial support for NGO and local participation, and helped prepare the Habitat II Global Plan of Action.
- *Intergovernmental Panel on Forests:* Participated in CSD"s Intergovernmental Panel on Forests, developing background papers and helping to chart future actions.
- *Convention on Trade in Endangered and Threatened Species (CITES):* Supported the listing of mahogany with analyses and by promoting broad discussion.
- *UN Convention to Combat Desertification:* Chaired delegation and coordinated technical input from other parts of the Agency, including the Africa Bureau and EG/Agriculture.

The Center was also effective in leveraging additional resources for G/ENV priorities, as shown in Table 1. The Center"s core budget of $26.0 million for the three SSOs helped leverage $284.9 million in commitments from Missions and partners; this is nearly a 1:11 ratio.

Table 1
Estimated Levering of G/ENV Core Funds ($ millions)

SSO	Core Funds	Mission/ Other Bureau Funds Managed	Partner Funds Leveraged	Total Funds Leveraged
SSO1	9.4	17.0	23.2	40.2
SSO2	5.4	42.4	81.9	124.3
SSO3	11.2	5.8	114.6	120.4
Total	26.0	65.2	219.7	284.9

B. Factors Affecting Program Performance

No significant changes in global factors affected our performance this year. However, five Agency factors substantially affected the level of our accomplishments: 1) slow procurement processes; 2) late arrival of FY 96 funds; 3) RIFs of three of our 10 IR Team leaders (IR 1.4 water, IR 2.3

pollution prevention, and IR 2.1 shelter and urban infrastructure); 4) the inability of the Agency to attain higher funding levels for the Urban Environmental (UE) Credit Program (formerly Housing Guaranty);[1] and 5) the overall low level of non-earmarked funds.

Slow procurement delayed the award of a Center administrative support contract designed to provide consulting services in a number of critical areas relating to our technical leadership capacities (see paragraph below). Late access to FY 96 funds hindered our ability to respond to certain Mission requests for technical assistance. The RIF of four senior officers resulted in a lack of fully qualified staff to fill environmental vacancies within G/ENV and other operating units, both in AID/W and in the field. The continued minimal funding level for the credit program has resulted in an inability to initiate new activities as new funds are insufficient to cover the existing program requirements. Low funding for forestry, water, and coastal IRs impeded our ability to maintain a program commensurate with the challenges in these areas. More detail about how these factors hindered program performance is provided in Part 2.

Factors affecting our performance positively include several steps the Center took to improve its effectiveness in technical leadership and support. Highlights include the following:

- The Center developed several new mechanisms for Missions and other Agency operating units to access a broader and more integrated array of environmental expertise than the Center"s older generation, more narrowly focussed projects. New technical support mechanisms include:
  - a new IQC for environmental policy, which in less than six months has generated substantial demand for its services;
  - a new cooperative agreement with Plan International and negotiations for a new cooperative agreement with the Environmental Law Institute;
  - two RFPs for new IQCs in energy and water resources management, which will be issued in FY 97;
  - two new cooperative agreements building on the experience of the Center"s biodiversity conservation program;
  - expanded scope and incorporated new partners in our pollution prevention program and
  - an administrative support IQC, which is about to be awarded to further the Center"s capacity to engage in its technical and administrative leadership responsibilities, including technical training, personnel management, and technical information dissemination.
- The Center is restructuring its staffing pattern in response to new administrative and technical needs. We are establishing a new program and policy unit to reinforce the Center"s program and strategic planning functions and to strengthen and integrate environmental policy activities in Mission support, international environmental forums, and research programming. In addition, a number of new technical RSSA staff will be recruited to strengthen the Center IR teams.
- The Center has embarked on several activities across the Global Bureau, including collaborations with the Environmental Health Program of PHN, the Office of Agriculture and Food Security, OFDA, and, more recently, the Agency Urban Initiative. Even within the Center"s own IR teams, more collaboration and programmatic integration is taking place, and multi-disciplinary Center teams are being fielded for Mission support. It is noteworthy that the

[1] ıough in 1996, Housing Guaranty (HG) was still the legal name for the program, throughout this R4 it will be referred to as Urban and Environmental Credit Program (UE Credit Program), which is the name of the successor as presented in the President"s FY 98 budget request.

Center has forged important new partnerships with USAID/Egypt and with the ENI environment office, two major Agency environmental programs.

- The Center has established a web site on the World Wide Web to facilitate information support to Agency and non-Agency partners and customers. The web site includes downloadable technical documents, descriptions of some 160 USAID environment activities, and links to other environmental information sources. The Center plans to make this site a key element of our information support to the field and a locus of two-way communication with our customers.
- G/ENV solidified partnerships with a wide array of stakeholders and clients this year, including the largest environmental Missions in the Agency. In the coming year, the Center will build on these successes and focus more on its technical leadership functions with a view to help achieve the Agency"s environmental objectives.

C. Status of G/ENV Performance Monitoring

This year"s R4 reflects our progress in instituting a performance monitoring system across all SSOs. FY 96 marked the first year that SSO2 " Sustainable Urbanization, IR 1.3 " Environmental Education, and IR 3.2 " Renewable Energy had "reengineered" systems in place to help measure performance. In the meantime, several IR teams were well on their way to improved approaches for measuring performance starting in FY 97. The biodiversity team, for example, worked closely with its partners to develop a series of innovative indicators and indices that captured the global scope of their results. They set FY 96 as the baseline year, and established targets for FY 97. Other IR teams are still at an earlier stage of instituting performance monitoring, having only recently developed new indicators and collected data to set baselines. The Center recognizes that performance monitoring is an integral tool for program management and budgeting, and is committed to developing a fully operational monitoring systems for all IRs by the end of FY 97.

The Center relied on three approaches to assess FY 96 performance. For IRs with an operational monitoring system, G/ENV compared actual and targeted results data for key indicators. For those IRs that lacked FY 96 targets, the Center assessed performance by comparing the "anticipated results" as identified in last year"s R4 with the actual results for this year. G/ENV also relied on anecdotal evidence to determine success or failure to a lesser extent than the previous two approaches. Based on these three approaches, the Center found that most IRs proceeded on track and successfully achieved anticipated results. In several cases, IRs exceeded expectations, while, in a few instances, they fell short of plans and required corrective action.

In developing a performance monitoring plan and reporting on results this year, the Environment Center grappled with how to accurately reflect its manageable interests and value added given that the results often encompassed different levels and modes of assistance. These levels ran the gamut, from advising Missions on designing and implementing field activities, jointly funding and managing field programs where Mission environmental capability is limited, channeling funding through NGO partners to complement Mission support, to launching global environmental initiatives in countries with limited USAID presence as a means of providing technical leadership. Developing indicators to capture these levels and modalities remains a central challenge over the next year.

In addition, G/ENV has determined that our objectives should be characterized as those which are

achieved in concert with field Missions and other partners. In the absence of a more appropriate term, we will defer to the "Strategic Support Objective" term for the purpose of this R4. Our concerns are detailed in Part 3 under the status of the management contract.

PART 2
PROGRESS TOWARD OBJECTIVES

Section I

Strategic Support Objective One: Increased and Improved Protection and Sustainable Use of Natural Resources, Principally Forests, Biodiversity, and Freshwater and Coastal Ecosystems in Key Areas

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Part One: Overview and Factors Affecting Program Performance

A. Overview

Increased and improved protection and sustainable use of natural resources, principally forests, biodiversity, and freshwater and coastal ecosystems, continues to be widely recognized in the broad development context as essential to sustainable development. Strategic Support Objective 1 (SSO1) involves four interrelated results packages designed to address the highest priorities of sustainable natural resources management.

G/ENV has made progress toward results in sustainable natural resources management under SSO1 in two principal ways. First, the Center provided technical leadership and assistance to Missions. Second, G/ENV funded activities, in close cooperation with Missions, which complemented Mission programs and contributed to the Agency"s global environmental objectives. For example, G/ENV direct support to local NGOs in Indonesia and Bolivia was instrumental in promoting recognition of indigenous people"s rights and in supporting each Mission"s efforts in sustainable forest management. The now well-established Biodiversity Conservation Program improved conservation of biological diversity in more than 10 million hectares of biologically important habitat in some 32 countries.

In some cases, G/ENV also supports environmental programs in strategically important countries without an environmental objective or a USAID presence. For example, G/ENV support for the Asian Forest Network is helping sequester carbon in India, a priority country for global climate change. Other programs conserve biological diversity in Papua New Guinea and the Pacific Islands, areas of exceptionally high biological diversity. G/ENV also developed new initiatives, including methods for determining regional conservation priorities, essential to guiding large-scale programs among multiple donors, which would not occur at a mission level.

B. Factors Affecting Program Performance

Program performance and reporting of program performance in FY 96 was affected by three primary factors.

- First, excellent accomplishments in all four results packages were achieved, but the absence of previously established baselines in prior years limited our ability to assess progress in quantitative terms. Our successful delineation of baseline conditions during FY 96 will now permit us in the future to state progress in more quantitative terms by the end of FY 97 and beyond.
- Second, limitations on available core resource levels in several areas, most notably forest

management and water resources, had the effect of slowing progress and limiting accomplishments during both FY 96 and continuing into FY 97.

- Third, the Agency"s RIF caused the loss of one IR Team Leader; subsequently, two sudden USDH retirements and the extended health-related absence of a fourth USDH significantly weakened the management of the SSO Team.
- Fourth, external factors encountered by some activities during FY 96 did affect performance in some local areas. For example, political conflict and violence in Indonesia delayed implementation of community-based activities in West Kalimantan and conservation priority setting work in Irian Jaya for several months.

Part Two: Progress Toward Interim or Final Results

G/ENV leadership oversees the implementation of four results packages. A brief summary table of the progress of our programs is provided below, followed by a more detailed discussion of each intermediate result.

Summary of G/ENV/ENR Progress toward SSO1:
Increased and improved protection and sustainable use of natural resources, principally forests, biodiversity, and freshwater and coastal ecosystems in key areas

Intermediate Result	Indicator	1996		1997
		Planned	Actual	Planned
1.1: Biodiversity	Area (ha) of biologically important habitat under effective management	(baseline)	463,010	630,000
	Documented improvements in biodiversity conservation as a result of improved policies or policy implementation	(baseline)	18	31
1.2: Forestry	Area (ha) of forest lands place under improved management practices	(baseline)	148,000	623,000
	Documented successes in increasing forest conservation through the dissemination of improved management practices and adoption of improved forest policies	(baseline)	13	15
1.3: Education	Number of countries that include environmental education and communication components in environment activity planning	4	8	11
1.4: Coastal	Kilometers of coastline under effective coastal governance	(baseline)	7,500	8,500
	Area (ha) of biologically important aquatic habitat under effective management	(baseline)	124,270	135,000

Notes: All values are cumulative.

1. IR 1.1: Effective Biodiversity Conservation and Management

The G/ENV biodiversity program emphasizes improving the management of significant biodiversity sites, improving policies that affect biodiversity, strengthening individual and institutional capacity, increasing public awareness, identifying biodiversity conservation priorities, and developing sustainable financing mechanisms for biodiversity conservation.

In FY 96, the IR 1.1 Team developed innovative performance monitoring and adaptive manage-

ment techniques, provided technical leadership on wildlife and forest management, helped develop the draft USAID Biodiversity Strategy and Policy, and shared lessons learned with Missions, Bureaus, and our development partners.

We achieved on-the-ground accomplishments through our partnerships with the Biodiversity Support Program (BSP), implemented by a consortium of the World Wildlife Fund, the Nature Conservancy, and the World Resources Institute; the Biodiversity Rapid Assessment Program (RAP), implemented by Conservation International; the Partnership for Biodiversity (PfB), implemented by the Department of Interior and the Peace Corps; the Neotropical Migratory Bird Conservation Program (NMBCP), implemented by the National Fish and Wildlife Foundation; the Consultative Group on Biological Diversity; and, most importantly, with Missions and Regional Bureaus.

a. Performance Analysis

Targets for FY 96

In FY 95, we developed objectives both for program management and for on-the-ground activities. Our principal management objective was to work closely with partners to revise our results framework, to develop a performance monitoring plan, and to establish quantitative baseline information for FY 96 and targets for FY 97.

Last year"s R4 outlines our plans to carry out a range of activities that contribute to on-the-ground conservation, including:

- increasing public awareness of biodiversity conservation by incorporating environmental education activities into our programs to manage key biodiversity sites and by promoting decision-maker understanding through the Summit of the Americas;
- identifying biodiversity conservation priorities in Peru, Central African Republic, the Congo, India, Indonesia, and other countries;
- developing sustainable sources of financing, including the implementation of 20 grants to develop community-based enterprises that support biodiversity conservation;
- strengthening national and local policies supporting biodiversity conservation in Mexico, Honduras, Nicaragua, Bolivia, Brazil, Peru, Russia, Indonesia, the Philippines, and Nepal; and
- improving management of globally important sites for biodiversity conservation in Mexico, Guatemala, Honduras, Ecuador, Haiti, Congo, and Uganda.

What We Accomplished in FY 96

As planned, G/ENV staff and partners reached agreement on a results framework and developed a performance monitoring plan for G/ENV biodiversity programs. Through intensive consultation and analysis, we defined new indicators to measure performance in achieving "effective biodiversity conservation and management" (several indicators are included in this section). As part of these activities, we established quantitative baselines for FY 96 and targets for FY 97.

Since the baselines were established in FY 96, we cannot quantitatively assess last year"s program performance using these indicators. Last year"s targets focused on *activities* that contribute to each one of our lower-level results. For clarity, we discuss our progress in terms of these activities briefly and then describe our progress in terms of our new performance monitoring system, which

emphasizes on-the-ground *results*.

Progress Toward Targets (Activities)

- **Increased public awareness of biodiversity conservation:** In FY 96, more than 18,000 individuals participated in G/ENV biodiversity outreach activities, more than 100 publications were printed and distributed to 34,000 people, and 115 media stories covered G/ENV activities. As planned, G/ENV also helped develop agenda items and background papers for the Summit of the Americas, focusing on shared aquatic resources, innovative financing, and analysis of economic incentives for biodiversity conservation.
- **Identification of biodiversity conservation priorities:** In FY 96, G/ENV sponsored 14 priority-setting exercises for biodiversity conservation. For example, a group of 35 Latin American experts established priorities for conservation in coastal systems throughout Latin America, based on their ecological value and conservation status. The experts also assessed the institutional and policy environments for coastal zone management. The map they produced will help USAID and its conservation partners prioritize investments in marine conservation.
- **Increased capacity of local managers of significant biodiversity sites:** Nearly 3,000 people were trained as an integral part of improving the management of important habitat for biodiversity, and exit surveys indicate that the training was useful. For example, a G/ENV training strategy and plan for protected area authorities was developed and adopted for national use by the Uganda Wildlife Authority. The training will be institutionalized with support from the World Bank.
- **Sustained financing of biodiversity conservation through innovative public and private sector funding:** G/ENV is testing and implementing promising mechanisms to ensure sustainable funding for biodiversity conservation. One promising approach is to create community-based enterprises that sustainably use biological resources to improve people"s livelihoods and to provide incentives for biodiversity conservation. By FY 96, G/ENV supported 19 viable enterprises that directly benefited more than 6,000 people.

Progress Toward Results (New Performance Monitoring Plan)

Biologically Important Habitat under Effective Management. G/ENV has promoted the improved conservation of biological diversity in more than 10 million hectares of tropical forests, mangroves, coral reefs, grasslands, and other biologically important habitat in 32 countries. The program helped develop management plans for 84 key biodiversity sites, strengthen the institutional capacity at 67 sites, begin implementation of these plans at 40 sites, and initiate ongoing monitoring at 38 sites. As a result, more than 460,000 hectares of this habitat is now effectively managed.[2] Specific examples for 1996 include:

- A three-year, $600,000 community-based ecotourism project (financed by US-Asia Environmental Partnership [US-AEP] and managed by G/ENV) has restored important habitat for biodiversity and is providing local sources of income in Nepal"s Royal Chitwan National Park. The park encompasses one of the area"s last remaining habitats for globally important populations of Bengal tigers and greater one-horned rhinoceros. Unfortunately, poaching and

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neet our definition of effective management, two key conditions must be met: 1) habitat quality is maintained/improved and/or the rate of habitat degradation is significantly reduced; and 2) institutions demonstrate an abilit r and respond to both threats and opportunities (adaptive management).

habitat loss threaten biodiversity in and around the park. With G/ENV assistance, the local user committee fenced more than 450 hectares of degraded buffer zone land to promote natural regeneration. Because of these efforts, the group was awarded land management rights and began a community-based ecotourism program. The Bagmara Wildlife Viewing Area is now a prime location for ecotourism and supports resident populations of rhinoceros, tiger, leopard, wild boar, and four deer species.

- G/ENV"s programs also led to the rejection of unsustainable activities by local communities. Recently, a logging company applied to cut in Mexico"s El Cielo Biosphere Reserve, which contains temperate mixed pine-broadleaf forest and the northern-most examples of cloud-forest. Many of the residents of the area are former loggers who have turned to other ways of making a living since the reserve was declared. In a four-year, $284,000 effort co-financed with USAID/Mexico, G/ENV has been assisting residents in developing alternative, environmentally sustainable livelihoods, while raising awareness about the importance of the reserve. As a direct result of the program"s activities, local communities blocked the resumption of logging.

Strengthened Policies and Improved Policy Implementation. G/ENV programs helped governments and local communities in 19 countries improve and implement policies related to biodiversity conservation. The programs have completed 160 policy analyses, which have led to the adoption of improved policies in 53 cases. In 31 cases, G/ENV programs have led to significant improvements in the implementation of existing policies to improve biodiversity conservation. Although improving the policy environment for biodiversity conservation is a long-term process, in at least 15 cases we have documented improvements in on-the-ground conservation resulting from our support. Highlights for 1996 include:

- Mapping indigenous peoples traditional use areas led to significant policy changes that conserve biological diversity. G/ENV worked with the Bentian Dayak in East Kalimantan, Indonesia to map their forest areas and to document traditional resource management practices. These people live in remote river villages and practice a regime of rotational gardening, hunting, and gathering that preserves local rainforest ecosystems, meets subsistence needs, and generates cash income through the sale of forest-cultivated rattan. As a result of G/ENV mapping and documentation, government officials were able to exclude Bentian areas from a proposed resettlement and monoculture reforestation site within a logging concession. This policy change will keep 150,000 hectares of forest intact under Bentian stewardship and serve as an important precedent for recognition of traditional community resource rights and management practices.
- Policies that promote sharing tourism revenues with local communities provided them with a strong incentive for conserving national parks. In Nepal, a G/ENV and US-AEP-supported NGO developed legislation permitting the local retention of 30 to 50 percent of the tourism fees and taxes. Approved in February 1996, the new legislation will make some $300,000 from park entrance fees and hotel concession taxes available for local community development in the area of Nepal"s Royal Chitwan National Park. A stakeholders group, which was formed under the auspices of the G/ENV-supported project, will also determine the use of the funds.

Analysis of Progress

G/ENV has generally met or exceeded its targets for FY 96, both in terms of program administration and management and in terms of completion of planned activities. Monitoring and evaluation programs now in place focus on planned results, and significant progress toward biodiversity

conservation is occurring on the ground, as documented above.

Key program partners have been agile in responding to management needs. For example, BSP was able to staff and quickly begin new community-managed conservation grants programs in Indonesia and Nepal in FY 96. BSP was also very responsive in helping develop and advance agenda items for the Summit of the Americas.

Our programs have largely met or exceeded our expectations on the ground as well. For example, a G/ENV and USAID/Brazil initiative in Bahia had planned to initiate the process of obtaining private reserve status for three to five parcels of land through the application of economic incentives for conservation. In fact, nine new reserves began the process this year. In addition, G/ENV partners intervened in a proposal to construct a road that would adversely affect conservation areas. In response, a new 7,000-hectare conservation area was proposed and approved, buffering the negative impact of the road.

There are some areas where we need to improve our effectiveness in the field. Some of our programs lack a strong in-country management presence, which has limited the responsiveness and effectiveness of certain conservation initiatives. For example, PfB is currently in the process of developing relationships with local NGOs and organizations. Efforts are under way to promote more active participation of Peace Corps volunteers, link with Mission programs, and focus PfB activities on achieving measurable results. Evaluation of NMBCP identified a need for strengthening the capability of prospective grantees and ability of the program to address critical themes on a country-specific basis. Thus, the program is pursuing a more proactive grant-making strategy and plans to employ a Field Liaison in FY 97. RAP is in the process of improving its Washington-based management and enhancing its in-country programs.

b. Expected Progress (FY97-99)

Site management. In FY 97, G/ENV will promote the improved conservation of biological diversity in more than seven million hectares of tropical forests, mangroves, coral reefs, grasslands, and other biologically important habitat in 22 countries. The program will help develop management plans for 138 key biodiversity sites, strengthen the institutional capacity at 86 sites, begin implementation of these plans at 40 sites, and begin ongoing monitoring and evaluation at 41 sites. As a result, an additional 167,000 hectares of biologically important habitat will be effectively managed in 20 sites, bringing our total to more than 630,000 hectares.

Improved Policies. G/ENV programs will also help governments and local communities in at least 11 countries improve and implement policies related to biodiversity conservation. Much of this work focuses on developing appropriate policies for resource extraction in a manner consistent with, or creating incentives for, the conservation of biodiversity. In FY 97, we will complete 27 policy analyses and 29 separate communication and educational initiatives to promote policy change. As a result, we expect improved policies will be adopted in 38 cases and improved policy implementation will occur in 21 cases. In 10 cases, we expect to document improvements in biodiversity conservation.

Biodiversity Priorities. G/ENV programs will work with local partners to set biodiversity con-

servation priorities in 66 countries, regions, or sites. Thirty-six organizations will be strengthened in priority setting, becoming proficient in the use of geographic information systems (GIS), field appraisal techniques, or methods for participatory biodiversity priority setting.

Sustainable incentives for conservation. To promote incentives for biodiversity conservation, G/ENV programs will help establish 31 community-based enterprises that depend directly on biodiversity, are financially self-sufficient, and monitor the impacts of their activities to ensure that the underlying resource base is not degraded. These enterprises will collectively benefit more than 9,000 people.

We are currently in the process of identifying planned results for FY 98 and beyond. During FY 97, we will be redesigning much of our program and will develop new implementation mechanisms and agreements.

In FY 97, we will:

- develop two new programs and negotiate new cooperative agreements for their implementation. These new programs will build on the experiences of BSP and NMBCP. In addition, we will begin to explore a new program with Conservation International that will build on the results of RAP. This new cooperative agreement with Conservation International is planned to begin in FY 98.
- identify performance targets for FY 98 and FY 99.
- develop maps illustrating program performance.
- complete evaluations for BSP (evaluation was initiated in FY 96) and PfB. The results of the BSP evaluation will be incorporated into the design of a new cooperative agreement.
- hire two RSSAs to replace one contract staff person and one AAAS Fellow.
- survey field missions to determine mission needs for support, interest in global programs, and gaps in our portfolio.
- strengthen in-country program management in programs, such as PfB and NMBCP.

G/ENV/ENR Biodiversity Program				
IR1.1:	**Effective biodiversity conservation and management**			
Indicator 1:	Area of biologically important habitat under effective management	FY	Planned (ha)	Actual (ha)
Unit:	Hectares (ha)	1996	Baseline	463,010
Source:	Field visits and evaluations	1997	630,000	
Comments: Two key conditions must be met for areas to be considered under effective management: 1) habitat quality is maintained/improved and/or the rate of habitat degradation is reduced; and 2) demonstrated institutional ability to monitor and respond to threats and opportunities (adaptive management). Results **are** cumulative.		1998		
		1999		
		2000		

G/ENV/ENR Biodiversity Program				
IR1.1:	**Effective biodiversity conservation and management**			
Indicator 2:	Documented improvements in biodiversity conservation as a result of strengthened policies or improved policy implementation	FY	Planned	Actual
Unit of Measure:	Number of policy successes	1996	Baseline	18
Source:	Reports from partners	1997	13	
Comments: Policies include laws, regulations, decrees, and agreements " adopted an organization " which support the conservation and management of biodiversity. Policies can be designed and implemented at local, regional, national, and international levels. Internal policies of conservation NGOs would not be included in this total. Policy successes are documented examples where G/ENV-supported efforts to improve policies or policy implementation have directly contributed to on-the-ground biodiversity conservation. Results are reported annually and **are not** cumulative.		1998		
		1999		
		2000		

G/ENV/ENR Biodiversity Program				
IR 1.1.2:	**Strengthened national and local policies and/or improved policy implementation to support biodiversity conservation**			
Indicator 1:	Index of policy results	FY	Planned	Actual
Unit of Measure:	Policy index	1996	Baseline	323
Source:	Reports from partners	1997	370	
Comments: Policies include laws, regulations, decrees, and agreements. They may be strengthened by improving either the policies themselves or their implementation. Each point represents the achievement of one of the following benchmarks in a policy initiative: policy analysis, communication and educational activities to promote improved policies, improved policies adopted by national, regional, and local institutions, adequate implementation of these policies, or documented improvements in conservation as a result of policy implementation. One point is awarded for each organization that completes a step. The cumulative score is calculated for all steps completed for each policy initiative. Tables are available that list all policy initiatives and track their progress. Results **are** cumulative.		1998		
		1999		
		2000		

G/ENV/ENR Biodiversity Program				
IR 1.1.3:	**Biodiversity conservation priorities identified through participatory planning and decision-making**			
Indicator 1:	Number of countries, regions, or sites in which biodiversity priorities have been assessed and/or established through a participatory process	FY	Planned	Actual
Unit of Measure:	Cumulative number of countries/regions	1996		14
Source:	Reports from partners	1997	66	
Comments: To be participatory, relevant resource users, conservation organizations, and national scientists and experts should be involved. In addition to priority setting exercises, site-specific land use planning or zoning exercises should be counted (e.g., zoning a biosphere reserve or establishing protected zones within a larger forest management area). Results are reported annually and **are not** cumulative.		1998		
		1999		
		2000		
		2001		

G/ENV/ENR Biodiversity Program				
Intermediate Result 1.1.3:	**Biodiversity conservation priorities identified through participatory planning and decision-making**			
Indicator 2:	Number of organizations with improved ability to set biodiversity conservation priorities	FY	Planned	Actual
Unit of Measure:	Cumulative number of organizations	1996	Baseline	70
Source:	Reports from partners	1997	36	
Comments: To be counted, organizations must become proficient in at least one of the following areas: 1) GIS; 2) field appraisal techniques; or 3) participatory biodiversity priority setting (as described above). Individuals would only be counted if their skills are sufficient to make their organization proficient in one of the three categories above. Results are reported annually and **are not** cumulative.		1998		
		1999		
		2000		

G/ENV/ENR Biodiversity Program				
IR 1.1.4: Improved management of globally and locally significant biodiversity sites				
Indicator 1:	Index of site management benchmarks	FY	Planned	Actual
Unit of Measure:	Site index	1996	Baseline	352
Source:	Reports from partners	1997	748	
Comments: Each point represents the achievement of one of the following site management benchmarks: change in legal status that favors conservation, local site assessments completed, management actions designed with appropriate participation, human and institutional capacity developed, management actions implemented, ongoing monitoring and evaluation established, or adaptive management demonstrated. Not all sites would be expected to complete all these steps, as these vary by program. Results **are** cumulative. Tables are available that list all policy initiatives and track their progress.		1998		
		1999		
		2000		

G/ENV/ENR Biodiversity Program								
IR 1.1.5:	**Sustained financing of biodiversity conservation through innovative public and private sector funding**							
Indicator 2:	Number, value, and beneficiaries of viable enterprises supporting the conservation of biodiversity	FY	Planned			Actual		
			N	$	B	N	$	B
Unit of Measure:	Cumulative number of enterprises (N) / value ($ gross sales) / beneficiaries (B)	1996	Baseline			19	201,000	6,324
Source:	Reports from partners	1997	31	327,500	9,130			
Comments: Conservation enterprises directly depend on biodiversity and, through its sustainable use, provide incentives for biodiversity conservation. To be considered viable, conservation enterprises must be financially self-sufficient and must monitor the impacts of their activities to ensure that the underlying resource base is not degraded. Beneficiaries are people receiving cash and non-cash benefits generated by the enterprises for local stakeholders. Results are reported annually and **are not** cumulative.		1998						
		1999						
		2000						

2. IR 1.2: Strengthened Sustainable Management of Natural Forest and Tree Systems

G/ENV"s program in Forestry and Global Climate Change provides research, training, synthesis, and dissemination of improved forest and tree management in more than 20 countries. Forest management is improved through:

- development, demonstration, and dissemination of sustainable forest management policies and practices;
- improving local management capabilities, enhancing devolution of authority to communities to manage forest resources, and facilitating local participation; and
- integrated assessment and monitoring systems for improving forest health, biodiversity conservation, and carbon sequestration.

In order to optimize the effectiveness limited resources, G/ENV focuses on influencing research agendas of international forest research centers, e.g., the Center for International Forestry Research (CIFOR), the International Center for Research in Agroforestry (ICRAF), and the International Center for Living Aquatic Resources Management (ICLARM). This research is synthesized, disseminated, networked, and applied to solve actual development problems through networking with USAID Missions, NGOs, national government agencies, local communities, and the private sector. The IR 1.2 Team also works to effect policies regarding reduced-impact harvesting (RIH) practices, reclamation of degraded lands, and community forest management. The Team accomplishes this through partnerships with the U.S. Forest Service (USFS), the Tropical Forest Foundation (TFF), Asia Forest Network (AFN), CIFOR, ICRAF, ICLARM, and USAID Regional Bureaus and Missions.

a. Performance Analysis

Targets for FY 96

G/ENV"s strategy has been to support research, demonstration, and information synthesis and dissemination of sustainable forest management practices and policies in order to promote the adoption of these practices for the conservation of forest ecosystems and reclamation of degraded lands. This strategy was elaborated into three sub-results for IR 1.2:

- increased adoption of improved forest and tree management practices and policies;
- increased local participation in forest and tree management; and
- improved forest monitoring and assessment capabilities.

The strategy recognizes that local participation and rights to forest management are essential for this adoption.

The following are examples of planned FY 96 activities: 1) integration of research, demonstration, and training on RIH in a series of tropical forest sites (for example, in Brazil and Indonesia, applied to improved forest concessions management by the private sector in these countries); 2) participatory forest management and devolution of forest management to local peoples in the Southeast Asia Region; 3) regeneration and management of degraded forest lands in Southeast Asia; 4) forest cover and health monitoring; and 5) measuring the impact of forest management on carbon storage in five different forest management systems.

What We Accomplished in FY 96

Increased adoption of improved forest and tree management practices and policies. Improved forest harvesting techniques can reduce by 50 percent the damage caused to tropical forests by conventional harvesting methods, wasting less wood, damaging fewer trees, sequestering more carbon, and conserving more biological diversity. G/ENV initiated and facilitated a partnership with USFS, CIFOR, and TFF to develop and disseminate sustainable forest practices in Brazil, Indonesia, Central Africa, Bolivia, Malaysia, and Belize. Our $50,000 support to TFF assisted the demonstration of RIH techniques on five sites in Brazil totaling 1,700 hectares.

G/ENV also provided $100,000 support to the Alternatives to Slash and Burn program of ICRAF. This program promotes the adoption of agroforestry practices and assisted-natural forest regeneration of degraded lands in Indonesia, Mexico, and elsewhere. Slash-and-burn agriculture is a major source of GHG emissions. Agroforestry research and the dissemination of appropriate techniques can curb the high rate of deforestation among tropical agricultural communities, while increasing the amount of carbon stored through growing trees. G/ENV"s support allowed ICRAF to continue its work, which leveraged $2.5 million from the Global Environment Facility for ICRAF"s Alternatives to Slash and Burn Program. G/ENV support to ICRAF resulted in 1) a workshop attended by 71 experts from Indonesia and 12 other countries on degraded land reclamation in Southeast Asia; 2) the development of a technical methodologies manual on the reclamation of degraded lands; and 3) a study of the social, economic, and other incentives necessary to complement technical aspects in the reclamation of degraded lands.

Increased local participation in forest and tree management. In collaboration with the Asia Bureau and respective USAID Missions, the G/ENV"s support to the AFN has influenced national policy in India, the Philippines, and Indonesia to encourage greater community participation in the protection and management of natural forests. IR 1.2 Team support of $125,000, combined with resources from the Ford Foundation and other donors, complemented USAID Mission programs by linking community organizations to effect policy change and disseminate information on forest management. It also allowed the IR 1.2 Team to continue new initiatives in strategically important countries for global climate change, such as India. By 1996, the program reached more than 20,000 Indian villages representing 5 to 10 million people actively protecting more than 2 million hectares of public forest land. More than 50 percent of participating communities have received formal recognition as management groups by the state forest department.

With G/ENV support, the AFN is replicating the India success in support of Mission programs in the Philippines. In 1996, a national program on community-based management was formalized that incorporated the AFN approach and will ultimately target 20 million people.

The IR 1.2 Team also promoted changes in policy that seek improved management of forest lands. Support for ICRAF, which totaled $100,000 in 1996, and CIFOR ($200,000) resulted in stimulating the Government of Indonesia to begin a process of modifying its national land tenure laws and policies to give local people secure tenure to degraded lands for reforestation. ICRAF is assisting the Government in drafting the modifications. This change, expected to be promulgated in FY 97, will significantly increase the incentive for local peoples to regenerate an estimated 8 million hectares of degraded forest lands.

Improved forest monitoring and assessment capabilities. G/ENV, in partnership with USAID/Indonesia, USFS, CIFOR, and the Indonesian Ministry of Forestry, created an integrated approach (satellite imagery, aerial videography, and ground plots) to monitoring forest cover, forest health, and biodiversity. Plans are now being developed to extend this model to additional sites in Indonesia, as well as to sites in Brazil, Mexico, and Russia where USFS and CIFOR currently have partnership agreements.

Relating to Global Climate Change, the IR 1.2 Team has supported the development and testing of methods to measure carbon sequestration and the maintenance of carbon sinks. In 1996, the monitoring of five forest/land use types was begun in the Brazilian Amazon, Indonesia, the Philippines, and Belize for a total of six sites.

Analysis of Progress

For the most part, planned activities have been carried out successfully and on time. G/ENV-funded research, demonstration, information dissemination, and training activities are having a large multiplier effect on the adoption of sustainable forest and tree management practices. Our training activities have been attended by forestry leaders from Asia, Africa, and Latin America. In Brazil alone, RIH practices were disseminated through on-the-job training and on-site courses reaching more than 400 foresters, concession crew members, landowners, mill owners, government officials, scientists, and educators.

G/ENV support of ICRAF"s Alternatives to Slash and Burn program influenced the Government of Indonesia to request assistance from ICRAF in the development of a policy to grant tenure rights to those reclaiming degraded lands. Such a policy change will affect the replanting of 8.6 million hectares of degraded lands in Indonesia alone, equivalent to 5 percent of the country.

Due to funding limitations, several priority actions were not realized, e.g., 1) coordinated analysis of the economic and policy aspects of reduced-impact management experiments for six tropical forest sites worldwide; 2) incorporation of a policy module in planned training programs (including videos and manuals) on RIH in Brazil and Indonesia; 3) synthesis of field work being conducted in Indonesia, Madagascar, and Bolivia on the roles of local peoples in forest management and their impact on forest resources; 4) ground-truthing and finalization of an integrated methodology for assessing carbon sequestration in USAID forestry projects; 5) development of a training package and mobile system (including equipment) for remote sensing/aerial videography monitoring of USAID forestry projects, with a focus on assessment of project indicators; and 6) a reduction in scale of improved forest health monitoring activities in Indonesia and Mexico.

b. Expected Progress (FY 97-99)

Planned Results in FY 97

Increased adoption of improved forest and tree management practices and policies. Highlights of planned FY 97 results include:

- publication by CIFOR/USFS of a synthesis of RIH that prioritizes research needs and assesses dissemination options;
- adoption of RIH in a 300,000-hectare forest concession in Indonesia"s East Kalimantan, including assessment of enabling policies and economic incentives for RIH including comparisons between standard practices and RIH;
- USFS/Government of Brazil initiation of natural forest management in Tapajos National Forest; additional TFF training workshops (2) and demonstration sites (3) in Brazil in collaboration with USAID/Brasilia;
- improved fiscal and institutional incentives to adopt sustainable forest and tree management practices in Indonesia, Brazil, Mexico, and Cameroon; and
- establishment of experimental sites in Indonesia and Philippines to improve mangrove management practices and to restore degraded mangrove ecosystems.

Increased local participation in forest and tree management. Highlights of planned FY 97 results include:

- expansion of the AFN into Cambodia to develop a community forest management program, and linking the AFN program with the USAID Nepal"s Community Forestry Program;
- integration of the CIFOR studies in Indonesia and Madagascar of enabling requirements for community-based forest management (in partnership with the Missions); and
- inclusion of support for community forestry in the recommendations of the Intergovernmental Panel on Forests to the U.N. Commission on Sustainable Development.

Improved forest monitoring and assessment capabilities. Highlights of planned FY 97 results include:

- initiation of the Integrated Forest Monitoring Program, including site selection (4-6 major forest areas worldwide), partnership development (USFS, CIFOR, USAID Missions, and host country collaborators), and methodology (satellite, aerial, and ground monitoring) integration;
- increased in-country capacity for monitoring forest cover and health in Brazil, Bolivia, Indonesia, and Mexico; and
- quantification of carbon sequestration by USAID-funded forestry projects in 10 sites.

Planned Results FY 98-99

As forests store carbon, they play an extremely important role in mitigating climate change. The Unites States places a high priority on mitigating global climate change. An increase in the budget for forestry would be consistent with this commitment. With increased resources, we would focus on expanding and strengthening the program along the lines outlined above, both within countries in which we are currently active and in others in which we are not currently engaged. Particular emphasis will be placed on the application of research results and dissemination of other information and technologies developed under the forestry/global climate change results package. We are in the process of identifying activities that will have the greatest impact on achieving these goals.

G/ENV/ENR				
IR 1.2:	**Strengthened sustainable management of natural forest and tree systems**			
Indicator 1:	Area (ha) of forest lands place under improved management practices .	FY	Planned	Actual
Unit of Measure:	Hectares	1996	Baseline	148,000
Source:	Reports from Partners	1997	623,000	
Comments: Reduced-impact management systems, integrated monitoring and assessment activities, regeneration of degraded forests, and increased community involvement.		1998		
		1999		
		2000		

G/ENV/ENR				
IR 1.2:	**Strengthened sustainable management of natural forest and tree systems**			
Indicator 2:	Documented successes in increasing forest conservation through the dissemination of improved management practices and adoption of improved forest policies.	FY	Planned	Actual
Unit of Measure:	Number of successes	1996		13
Source:	Reports from Partners	1997	15	
Comments: Number of demonstration sites, training activities and policy improvements conducted on improved forest and tree management practices.		1998		
		1999		
		2000		

3. IR 1.3: Increased and Improved Use of Environmental Education and Communication Strategies, Methods, and Tools

USAID"s flagship mechanism for this IR is the jointly managed G/ENV and G/HCD GreenCOM Program, which focuses on the human dimension of environmental problems by combining state-of-the-art expertise in education, communication, and social marketing with sound environmental programming. GreenCOM field activities involve: 1) the identification and assessment of target audiences; 2) assisting local institutions and organizations in the development and implementation of targeted communication and education programs; and 3) monitoring and evaluation to determine impact and continued use of these strategies, methods, and tools.

a. Performance Analysis

Targets for FY 96

Targets for FY96 were to:

- develop a draft performance monitoring plan for GreenCOM, with baselines and targets;
- increase and improve the use of environmental education and communication (EE&C) strategies, methods, and tools in a minimum of four USAID-assisted countries;
- synthesize and disseminate lessons learned in the field through peer-reviewed articles, case studies, and a bulletin that reviews innovative EE&C methods;
- draft a training manual; and
- use EE&C materials and curriculum outreach to reach a minimum of 500 individuals and organizations through GreenCOM"s EE&C Resource Center.

Accomplishments in FY 96

Increased use of EE&C Strategies, Methods and Tools in the Field. GreenCOM exceeded targets in providing technical support to USAID-assisted countries in the areas of environmental education and communication programs. In 1996, GreenCOM provided technical leadership and assistance to mobilize popular support for national and regional environmental policies in three countries; assisted in the development of targeted public awareness programs and formal education initiatives to address biodiversity concerns and issues in three countries; and mobilized community participation in water and coastal resources management, protected area management, and improved delivery of urban services in two countries.

For example, in El Salvador, GreenCOM and the Mission co-financed and collaborated with the Ministries of Environment and Education and national level NGOs in the development of a national policy for environmental education and communication. A three-day meeting brought together the President, ministry heads, representatives of the private sector and NGOs, and more than 1,000 other attendees to address problems and opportunities for EE&C. Agreement was reached on the effectiveness of various strategies to increase awareness and to mobilize support. This event followed a three-year, $3.9 million collaborative EE&C effort that developed a primary school environmental education curriculum that focused on the promotion of environmental values and trained more than 4,000 middle and high school teachers in the use of environmental materials. This aggressive training stimulated increased national interest in the environment, with more than 70 percent of students selecting environment topics for social service projects.

Concurrently, GreenCOM worked with the media and national organizations to launch a nation-wide public awareness program to increase the understanding and awareness of environmental journalists. This effort has resulted in 40 percent increased coverage of environmental issues in national newspapers and magazines. GreenCOM also established a unique public-private partnership with El Diario, the national daily newspaper, to produce a monthly Sunday environmental education supplement for children. More than 600 teachers now use the supplement in class, and 60 percent of the readership is children. As a result of an increasing awareness of environmental issues, an annual national environmental awards program run through the daily paper has resulted in more than 32,000 student entries.

G/ENV/ENR				
IR 1.3:	**Increased and improved use of EE&C strategies methods and tools in USAID assisted countries**			
Indicator 1:	Inclusion of EE&C components in environment activity planning	FY	Planned	Actual
Unit of Measure:	Number of countries incorporating EE&C activities	1996	4	8
Source:	Activity Reports from Partners	1997	6	
Comments: Evidence of activity in country that uses/demonstrates and shows results from successful EE&C strategies, methods and tools. Deviation for FY 96: exceeded target due to increased demand from missions		1998		
		1999		
		2000		

Synthesis and Dissemination of Lessons Learned. In FY 96, GreenCOM exceeded targets for the synthesis and dissemination of lessons learned. Accomplishments include an initial draft of the EE&C Methods handbook and two issues of the bulletin *Human Nature* (which is co-sponsored by the World Conservation Union and the World Resources Institute), which were produced and disseminated in three languages to more than 2,000 policy-makers and EE&C practitioners. More than 2,500 copies of discussion papers on the role of EE&C in fostering sustainable cities were disseminated. Two case studies were produced and developed to 40 policy-makers that highlight various strategies, methods, and tools used in the field; and EE&C Resource Center staff established a searchable database for EE&C practitioners in the field. GreenCOM staff presented case studies and lessons learned at five UN conference venues and in broadcasts during World Environment Day.

At the request of the Africa Regional Bureau, GreenCOM conducted five country assessments of current environmental education programs to identify and promote successful methodologies. Results from the assessments have been translated into a manual, disseminated, and used by more than 800 environmental policy-makers and environmental educators.

The following is only a sample of our indicators for synthesis and dissemination.

G/ENV/ENR				
IR 1.3:	**Synthesis of Lessons Learned in Developing and Implementing EE&C Strategies, Methods, and Tools**			
Indicator 2:	Development of case studies, articles and EE&C Bulletin	FY	Planned	Actual
Unit of Measure:	Number of articles, case studies produced	1996	6	8
Source:	Activity Reports, submission of studies, articles and Bulletins	1997	6	
Comments: Deviation for FY 96: exceeded target due to rescheduling of bulletin production and new opportunity for discussion paper series. Reporting is annual, not cumulative.		1998		
		1999		
		2000		

Analysis of Progress

Progress toward targets under the this IR has been excellent and generally exceeded expectations. The application of communication and education strategies in the environment sector is still new, and appropriate monitoring and evaluation is critical to the revision of programs and validation of the lessons learned in the field. Though we have had successful interventions in the field, our partners were not always able to provide sufficient resources for program evaluation. GreenCOM has addressed this issue by incorporating more informal evaluation tools to ensure feedback to program implementors and to glean lessons learned. Plans are now in place to evaluate interventions in Egypt, Nicaragua, El Salvador, and Mali over the next three fiscal years to provide us with increased data and feedback, providing a strong basis for lessons learned. Nevertheless, program evaluation would be the highest priority use of any additional resources.

b. Expected Progress (FY 97-99)

Increased use of EE&C Strategies, Methods, and Tools. Highlights of planned results include:

- greater public awareness of water policy and development and implementation of a curriculum in water conservation in Egypt;
- nationwide curriculum development and teacher training for environmental issues and concerns in Mali; and
- in collaboration with the State Department, facilitation by GreenCOM of the development of a regional (seven-country) awareness campaign on water conservation as a part of the Middle East Peace Process (FY 97-98).

Synthesis and Dissemination. Highlights of planned results include:

- co-sponsorship of an international workshop for environmental educators to share lessons learned;
- revision of the methods handbook;
- development of draft training modules in specific EE&C areas drawing from lessons learned; and
- continued representation and promotion of the importance of environmental education and communication in the UN and other international venues.

4. IR 1.4: Increased Conservation and Sustainable Use of Freshwater and Coastal Resources

Overview

G/ENV supports activities contributing to integrated management of water and coastal resources in key regions and countries. The program focuses on three program areas: 1) improved governance of coastal ecosystems; 2) strengthened conservation and management of living aquatic resources; and 3) integrated management of water resources across economic sectors. The program emphasizes: more effective governance and policy implementation supporting integrated resource management approaches and practices; improved public awareness and decision-maker understanding of resource use issues and management interventions; demonstrated effective site management through participatory planning and decision-making; and increased human and institutional capacity for sustaining integrated resource management programs.

G/ENV manages its water and coastal resources program in cooperation with regional bureaus and missions and implements activities through G/ENV-funded partnerships with the University of Rhode Island"s Coastal Resources Center (URI/CRC), the World Wildlife Fund (WWF), and the U.S. National Oceanic and Atmospheric Administration (NOAA). The water/coastal team also works with other technical programs and partners on collaborative activities that complement and reinforce the results package. These partners include G/ENV"s Environmental Policy and Institutional Strengthening IQC (EPIQ); G/ENV"s GreenCOM project; G/EG"s MERC project; and USAID/Jamaica"s Caribbean Regional Program. Non-USAID partners include ICLARM, the Howard Gilman Foundation (White Oak Conservation Center); the World Bank, and the Inter-American Development Bank.

a. Performance Analysis

Targets for FY 96

Last year"s R4 outlined plans to carry out a broad range of activities that contribute to strengthening the conservation and sustainable use of freshwater and coastal resources in key countries, emphasizing:

- building awareness at key levels in USAID-assisted countries of the critical issues of water conservation and coastal zone management;
- assisting USAID"s customers and development partners in improving management of water and coastal resources and conservation of aquatic and marine biodiversity;
- strengthening institutional capacity to develop and implement integrated water and coastal management policies, strategies, plans, and programs; and
- helping USAID-assisted countries, regional institutions, and international organizations resolve local and regional water conflicts and coastal and marine environmental problems while working to achieve national development objectives.

FY 96 Accomplishments

As shown in the performance data tables, by the end of FY 96, the water and coastal resources program had supported improved management of more than 7,500 kilometers of coastline and 124,270 hectares of important coastal and marine habitat in 10 countries across Asia, East Africa, the Middle East, and Latin America and the Caribbean. The program helped improve national and local governance of coastal ecosystems in Sri Lanka, Kenya, Zanzibar, Mexico, and the Eastern Caribbean; strengthened the management of coastal and marine protected areas in Nicaragua, St. Lucia, Dominica, Kenya, and the Gulf of Aqaba (Israel and Jordan); developed integrated coastal management performance monitoring and adaptive management techniques for worldwide use by USAID missions, development partners, and other donors; shared lessons learned (e.g., on participatory coastal governance, sustainable shrimp mariculture, stewardship of mangrove ecosystems, integrating social and gender realities into coastal management) with a global audience of policy-makers and resource management practitioners; and trained more than 50 integrated coastal management practitioners from 23 countries. In addition, by the end of FY 96, development of a new IQC delivery order mechanism for integrated water resources management field support was well under way.

Improved Governance of Coastal Ecosystems. USAID has learned, through its pioneering coastal programs in the 80s and 90s, that sustained progress in coastal governance is an essential pre-condition to improved coastal environmental quality and improved quality of life for coastal residents. The process unites government and communities, science and management, and sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources. Examples include the following.

- Sri Lanka"s national plan for integrated coastal management (ICM) requires set-backs for all coastal development and includes new policies for sustainable tourism, water quality maintenance, and participatory site management. Site management plans are being implemented for Hikkaduwa**,** the first operational national marine park, and Rekawa, a lagoon ecosystem where co-management has resulted in increased lagoon fisheries productivity, fewer resource allocation disputes, additional income to local residents, and a 95 percent reduction in coral mining.
- In Mexico, Amigos de Sian Ka"an, a leading NGO, helped the citizens of Xcalak develop an integrated coastal management plan for their rapidly developing community, and identify and promote best tourism practices for the Quintana Roo coast. In Xcalak, villagers and local government officials better understand the need for and realities of marine park management from a cross-visit to Hol Chan Reserve in Belize.

Strengthened Conservation and Management of Living Aquatic Resources. Improved management and sustainable use of aquatic habitats and their biological resources contributes directly to USAID"s environmental objective of biodiversity conservation. Direct interventions supported by G/ENV and its partners have helped nations comply with the international Biodiversity Convention by determining and implementing their management needs and applying new conservation practices successfully to local conditions.

- At Nicaragua"s Miskito Coast Marine Reserve, plans were developed for government and community co-management of fisheries, conservation of coral reefs and other habitats, and protection of endangered marine species. This effort complemented mission-funded conservation efforts in the area and the USAID G/CAP PROARCA program.
- The Red Sea Marine Peace Park, a multi-use marine reserve in the Gulf of Aqaba, has been established as a Middle East Peace initiative. Egypt, Israel, Jordan, and Saudi Arabia are working together for the first time to develop a marine resources monitoring program.

Integrated Management of Water Resources Across Economic Sectors. A very strong international consensus calls for urgent application of an integrated approach to planning, development, and management of water resources. G/ENV activities are designed to support mission efforts to demonstrate integrated management practices, and to enhance international partnerships and initiatives. Despite the lack of a FY 96 core budget in this program area, progress was made in a few key countries in collaboration with missions and other partners. In addition, planning and design of a new water resources IQC field support is well under way.

- An $8 million water resources initiative was designed in Egypt to increase the efficiency and productivity of Egypt"s Nile water resources for irrigation and other sectors.
- In partnership with the World Water Council, the World Bank, and the Howard Gilman Foundation/White Oak Conservation Center, G/ENV helped develop guidelines for incorporating aquatic biodiversity values into Asian water development projects.

Analysis of Progress

Overall, G/ENV"s water and coastal resources program has made substantial progress in achieving the FY 96 targets generally planned in last year"s R4. Program administration and management has focused on improving performance monitoring and evaluation, particularly for ICM activities, which will help determine more accurately if significant progress toward sustainable coastal management is occurring in cooperating nations and local sites. Progress in setting targets and measuring performance for aquatic resources conservation and integrated water resources management is lagging behind the more mature coastal program, but the gap will begin to close this year and into FY 98 as the partnership with NOAA is redesigned, a RSSA water resources advisor is added to the G/ENV team, and the new water resources IQC mechanism becomes operational.

b. Expected Progress (FY 97-99)

FY 97 Plans

Highlights of planned results include the following.

Improved Governance of Coastal Ecosystems

- G/ENV in cooperation with URI/CRC will initiate projects to improve national enabling policies in Indonesia and Tanzania and to strengthen integrated management of 16 sites, including 14 sites with significant biodiversity value, 6 of which are currently urban or rapidly urbanizing. Partners from Indonesia who are just launching their ICM program will visit and learn from ongoing USAID-supported national programs in Sri Lanka and the Philippines. The emerging ICM experience from Quintana Roo, Mexico will be shared with more than 40 practitioners from throughout Latin America and the Caribbean in April 1997, and 30 from Mexico in June 1997.
- An ICM practitioner "tool box" on methodologies and tools for participatory ICM will be published and disseminated. The applicability of citizen monitoring techniques to ICM problems will be tested at selected field sites. URI/CRC"s "common methodology for ICM learning" will be tested through application to selected field activities, as well as in GEF-funded coastal projects in Patagonia and a number of other LAC locations.
- URI/CRC will continue to support networks of ICM professionals through Intercoast Network, CRM II"s web site with electronic discussion groups. Emphasis will be placed on more cost-effective delivery systems that make use of electronic rather than paper products.

Strengthened Conservation and Management of Living Aquatic Resources

- Through NOAA and in collaboration with G/EG"s MERC project, a multi-year marine resources research and monitoring program will be established for the upper Gulf of Aqaba, which includes the Red Sea Marine Peace Park. The program will link scientists, managers, and planners in developing and implementing integrated plans for managing the Gulf"s extraordinary marine resources, including relatively pristine but endangered coral reef systems.

Integrated Management of Water Resources across Economic Sectors

- G/ENV will establish an IQC delivery order mechanism to provide technical expertise for assessment and analysis of integrated water resources management (IWRM) issues and options in key countries and for design, implementation, and monitoring/evaluation of highly responsive IWRM activities. The IQC award is expected by late FY 97. It will be broad in scope and strongly complement G/ENV"s existing IQCs for EPIQ and environmental and sanitary engineering.
- G/ENV will support Global Water Partnership (GWP) efforts to improve integrated water resource management in Southern Africa. The Water Resources Advisor for the USAID Regional Center for Southern Africa will play a major role in leading this effort in collaboration with the G/ENV water team.

G/ENV/ENR				
IR 1.4:	**Increased conservation and sustainable use of freshwater and coastal resources**			
Indicator 1:	Kilometers of coastline under effective coastal governance	FY	Planned	Actual
Unit:	Kilometers (km)	1996	Baseline	7,500
Source:	Field visits and evaluations; Mission reports and reports from partners	1997	8,500	
Comments: Effective governance of coastal ecosystems is defined as 1) where a continuous and dynamic process unites government and communities, science and management, and sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources; and 2) where key environmental concerns (e.g., water quality, fisheries, condition of coastline, coastal hazards, coral reefs, seagrasses, mangroves, other selected habitat) are maintained/improved and/or the rate of degradation reduced as a result of program activities. Results **are** cumulative.		1998	10,000	
		1999	12,500	
		2000	15,000	

G/ENV/ENR				
IR 1.4:	**Increased conservation and sustainable use of freshwater and coastal resources**			
Indicator 2:	Area of biologically important aquatic habitat under effective management	FY	Planned (ha)	Actual (ha)
Unit:	Hectares (ha)	1996	Baseline	124,270
Source:	Field visits and evaluations; Mission reports and reports from partners	1997	135,000	
Comments: Two key conditions must be met for areas to be considered under effective management: 1) habitat quality is maintained/improved and/or the rate of habitat degradation is reduced; and 2) demonstrated institutional ability to monitor and respond to threats and opportunities (adaptive management). Results **are** cumulative.		1998	150,000	
		1999	175,000	
		2000	200,000	

Section II

Strategic Support Objectives Two:
Sustainable Urbanization and Pollution Prevented

Part One: Overview and Factors Affecting Program Performance

A. Overview

Within the next few years, more than half of the world"s population will live in urban areas. Almost all of this growth will occur in the developing world. Worldwide in developing countries, the urban population is expected to increase by 2.5 billion people over the next 20 years. In Asia alone, cities with more than 1 million residents are expected to nearly triple from 359 in 1990 to 903 by the year 2015. The significance of this trend cannot be underestimated and has implications for how the Agency"s objectives are framed and implemented.

This year, G/ENV worked in more than 30 countries in Asia, Africa, Latin America, and Eastern and Central Europe to strengthen policy and institutional reforms in urban finance, to support decentralization in urban management functions, to build host country national and local governments to address urban growth, and to improve host country capacity to reduce industrial pollution. Pilot demonstration activities continued and some new were started across all four regions. These programs led to some concrete results in FY 96, particularly in key countries and regions, including South Africa, Zimbabwe, Indonesia, India, Poland, the Czech Republic, and Central America.

In FY 96, G/ENV"s Strategic Support Objective 2 (SSO2) team played a lead role in the Second United Nations Global Conference on Human Settlements (Habitat II) held in Istanbul in July 1996. USAID"s leadership within the United States Government and among the world"s nations resulted in the drafting of a Global Plan of Action (GPA) that emphasizes sustainable urbanization by promoting appropriate health, democratic, economic, and environmental actions in cities in the developed and developing world. This GPA represents significant advances in promoting decentralization, in enabling environments for public participation and economic development, and for improved environmental management of urban areas, including an agreement to support the phase-out of lead in gasoline.

SSO2"s UE Credit Program is one of the instruments used to achieve SSO2 objectives. Mission Development Assistance (DA)-funded technical assistance activities that accompany the loan programs, as well as the policy and institutional change conditionalities of the loans placed in the Program Agreements with our development partners, help make sustainable the results and benefits realized form the provision of loan funds.

Global Bureau DA funds help support development of: appropriate policy and legal frameworks; institutional capacities; financial systems; public participation; and information sharing/best practices " interventions critical to the achievement of the SSO2 objectives.

Three interrelated intermediate results contribute to achievement of SSO2:

- improved access to shelter and urban environmental services;
- improved urban management; and
- reduced urban pollution.

B. Factors Affecting Program Performance

Three principal factors affected performance and the reporting of this performance during FY 96.

First, SSO2"s UE Credit Program subsidy levels declined from $19.3 million in FY 95 to $4 million in FY 96, reducing program authorization levels from $148 million for seven countries in FY 95 to $82 million for four countries in FY 96. Due to careful targeting of the UE program to highly creditworthy countries with significant urban investment needs and active private sector partners, such as Indonesia and South Africa, this drop did not produce the expected devastation on authorization levels in FY 96.

Disbursements of UE program funds generally take place in tranches beginning two or three years following authorization and obligation. We therefore see program results being reflected between two and five years following the obligation of the program funds. Annual targets are therefore based on expected disbursements and not on expected authorizations. This allows us to more accurately measure progress.

In FY 96, $62 million was disbursed, which resulted in close to 500,000 families receiving access to services and shelter. Anomalies are to be expected. For example, in FY 97, the liquidation of all pre-credit reform programs will result in higher disbursement levels than would be normal. Also, programs that were designed and established in 1994 and 1995 are now positioned to show tangible results. Additionally, FY 99 marks the end of several programs that were authorized during the peak years of FY 94 and FY 95, which will result in higher disbursement levels. Assuming that the UE Credit Program continues at the current low subsidy levels, disbursements will be considerably lower beginning in FY 2000.

Second, the SSO2 program budget was restructured in FY 96 to include the Environmental Pollution Prevention Program (EP3). In real terms, the SSO2 program budget decreased significantly from FY 95 to FY 96. This restructuring resulted in an increased workload for the SSO2 team, while at the same time there was a decline in OE resources and the 1996 reduction-in-force substantially reduced the levels and management capacity of SSO2"s programs. The leaders for two of the three IR teams were let go, leaving one direct hire overseeing all three teams. In September, an IPA was brought on to lead SSO2"s Reduced Pollution team.

Third, SSO2"s framework underwent a series of modifications, based on field input and data collection constraints. At the time the R4 document was presented last year, G/ENV was in the process of developing a Strategic Objective framework in close collaboration with its regional offices in the field. No targets were set at either the Strategic Objective or IR levels. During the course of FY 96, several changes were made to the indicators, based on feedback received from the field. Also, the Strategic Objective was changed to a Strategic Support Objective to better reflect the relationship between G/ENV (including the regional urban development offices [RUDOs]) and bilateral Missions. The SSO2 level indicators chosen are:

- number of low-income households benefitting from improved urban environmental infrastructure and shelter solutions; and
- number of industrial facilities implementing pollution prevention strategies.

The Center requests that these revised indicators, which are more reflective of the SSO"s manageable interests, be formally accepted beginning this year through FY 99. FY 96 data for each of these are available and are used as the baseline. At the IR level, an "index" of targets and measures at the country level needs to be further refined. This work is part of the Center"s performance monitoring plan.

Part Two: Progress Toward Objectives

A. Performance Analysis at the SSO level

Because G/ENV"s performance monitoring system is still in its formative stage, the Center"s SSO2 team assessed progress using a combination of two approaches: 1) by tracking actual results using the two proposed SSO indicators; and 2) by highlighting selected examples of progress and accomplishments across its regional SSO2 programs.

The program leveraged close to $82 million in loan authorizations and $62 million in disbursements for infrastructure services and shelter solutions, due to effective management of the credit subsidy and loan authorization resources. The program was also used strategically to leverage domestic private resources and capital flows from other donors and host countries, and to assist in USAID"s exit from selected countries. For example, in Indonesia, the RUDO/USAID-designed program for local governments leveraged a commitment of $280 million from the Asia Development Bank (ADB) to go in urban infrastructure and shelter finance investments. RUDO/USAID India pioneered the concept of municipal bonds for urban development infrastructure in India, paving the way for the World Bank to initiate a $1.2 billion infrastructure program. The Czech Republic, Tunisia, and Chile are three examples of countries in which USAID used the UE Credit Program to phase out its DA programs. Each of these programs yielded significant results in terms of access to infrastructure and shelter and development and implementation of policy reforms required to leave a sustainable system of financing in place. **A total of 514,210 households were provided access to services in FY 96.**

G/ENV exceeded its targets for reduced pollution for 1996. A total of 298 industrial facilities implemented pollution prevention interventions in FY 96, compared to its target of 132. This result exceeded expectations for three reasons: four new country programs became operational in FY 96; the lag time from recommendation to implementation (i.e., recommendations made from audits conducted in FY 95 were actually implemented in FY 96); and interventions based on recommendations made at sector workshops were captured for selected countries. At the time the target was established, it was not certain how many of these new programs would be initiated. Also, mechanisms for capturing the number of interventions made as a result of participation in workshops were not in place. Consequently, these figures were not factored into FY 96 targets.

G/ENV also met its management goal of closing two of its RUDOs " the one for the Caribbean (Kingston) and the one for Southeast Asia (Bangkok). EP3 programs in Tunisia and Chile were closed as well.

SSO 2: Sustainable Urbanization and Pollution Prevented			
INDICATOR: Total number of households benefiting from improved urban environmental infrastructure and shelter solutions (mortgages, small home loans, construction loans, serviced sites)			
UNIT OF MEASURE: Target households	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: Reports from RUDOs, Annual Urban Environmental Credit Program Performance Monitoring Data	(B)1994*		4,784,976
INDICATOR DESCRIPTION:	1995	NA**	484,559
COMMENTS: * 1994 is cumulative that G/ENV/UP is collecting annualized data; indicators thus far have been reported on the basis of achieving LOP targets. 1995 actual is deduced data for the impact of the UE Credit Program (formally the Housing Guaranty); subsequent data shows annual increase in number of households benefiting from improved environmental infrastructure and shelter solutions. There is usually a lag of 2 to 3 years between authorizations (appropriated funds) and loan disbursements or results. ** 1996 is the first year	1996	NA	514,210
	1997	795,000	
	1998	545,000	
	1999	745,000	

SSO 2: Sustainable Urbanization and Pollution Prevented			
INDICATOR: Number of industrial facilities satisfactorily implementing pollution prevention			
UNIT OF MEASURE: industrial facilities	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: EP3 Project, Reports from RUDOs	Baseline 1994		0.00
INDICATOR DESCRIPTION:	1995	60	73
COMMENTS: Actual for 1995 and 1996 are based on the number of plants implementing PPDA recommendations plus a percent of EP3 workshops participants known to be implementing P2 options (based on information from the EP3 field offices). Data for 1996 include Chile, Tunisia, Ecuador, Indonesia, Egypt, Peru, Bolivia, Mexico, Paraguay, and Sri Lanka.	1996	132	298
	1997	400	
	1998	600	
	1999	800	

The implementation of SSO2 rests largely with the RUDOs, with assistance from SSO2 teams in AID/W. Each RUDO"s work is fully integrated with country missions. However, they also interface actively with G/ENV/UP to facilitate complementarity and value added output from AID/W. RUDO-managed programs include: 1) targets and indicators of performance presented in Mission R4s using Mission DA resources, under a wider range of Strategic Objectives; and 2) program activities supported directly by SS02.

Demand for RUDO services remained high. RUDO officers implemented multi-million dollar and mission grant portfolios in seven countries. SSO2 team staff in Washington assisted regional bureaus with designing local governance and pollution prevention programs in seven countries as well, and received high marks for their contributions. AAAS Fellows on the team traveled

extensively, doing repeat visits to Missions requiring specialized expertise in water or environmental law.

B. Expected Progress (FY 97-99) and Management Actions at the SSO Level

Projected disbursements under the UE Credit Program of $224 million in FY 97, $93 million in FY 98, and $82 million in FY 99 are expected to benefit 800,000 families in FY 97, 550,000 in FY 98, and 750,000 in FY 99. These projections are subject to a number of variables, including host country macroeconomic conditions. The target numbers for new industrial facilities implementing pollution prevention technologies in FY 97 and FY 98 are 400 and 600, respectively.

In FY 97, the pollution prevention activities will be hampered by the loss of three EPA RSSAs whom EPA pulled back and who provide direct technical advise and management to the EP3 activities, a program that ends in FY 98. In FY 97, the team will design a new mechanism for support of "environmental management systems," which will integrate municipal as well as industrial pollution prevention and will develop a new global agreement with EPA.

In FY 97, one more RUDO will be closed (Tunisia). Reorganization of RUDOs will continue through FY 99 in order to: 1) adjust to decreased OE; 2) ensure that the RUDO structure fits within the Agency"s reorganized structure; and 3) ensure adequate monitoring of the active UE program portfolios throughout the world.

Indicators currently being used are within our manageable interests. However, more suitable measures will need to be developed in FY 97 and FY 98, to reflect the breadth of the SSO2 program. Then, in FY 99, SSO2 will have indicators with appropriate baselines and targets to reflect our activities.

1. IR 2.1: Increased Access to Urban Environmental Services

a. Performance Analysis for IR 2.1

To be sustainable, cities must simultaneously address the environmental and public health impacts of the urbanization process and provide the infrastructure to ensure economic productivity for both citizens and the private sector. Because the **availability of financing** is well understood to be one of the key determinants of the level access to these services, activities under IR 2.1 address the financial needs associated with the provision of environmental services and infrastructure in urban areas.

The need to raise funds for capital investment and to economically manage the provision of services at the municipal level are the two critical technical issues supported under this IR. As the UE program has matured, the understanding has grown, on the part of both USAID and our counter-parts, that development assistance will not **provide** the capital investment funds for future urban development, but will be used to **leverage** capital funds from the private sector. But certain systemic conditions must be in place for the transition to commercial financing to succeed " in particular, development of the financial sector to mobilize the needed capital (whether by the public or private sector) and improvement in the management and financial practices of municipalities.

The United States is in a unique position to provide technical advice in this area due to the

sophistication of our municipal financial markets, the quality of our financial management practices at the municipal level, and our experience with the privatization of municipal services. Each of these is a critical area of activity within the urban development field where practical expertise is in constant demand.

Hence, the primary policy and institutional objective under this IR is to **introduce the elements of an integrated approach to providing sustainable financing mechanisms for increasing access to urban environmental services and shelter for the poor**. Objectives under this intermediate result are:

- developing policy and legislative frameworks in selected countries that decentralize municipal finance systems and allow commercial financing and privatization of urban infrastructure and municipal services;
- creating self-supporting financing and cost recovery approaches for capital projects and urban services;
- improving the financial management of selected local governments to make them more efficient and creditworthy clients (this objective is shared with IR 2.2); and
- enhancing the capacity of NGOs and community finance institutions (CFIs) to provide shelter loans to low-income families.

Global targets under each of these areas are not set because the level of maturity of financial markets varies significantly. RUDOs met and in some cases exceeded their country-level targets related to this IR. Progress under this IR is measured by how well the RUDOs introduce these four elements as an integrated approach to sustainable finance, with the acknowledgment that countries differ radically in level and approach to market-based finance.

In 1996, all four RUDO-assisted countries working on urban finance policy frameworks (South Africa, Indonesia, India, and Central America region) introduced *policy and legislative changes at the national and local level to allow for decentralized and alternative sources of financing.* In Indonesia, the RUDO"s integrated approach was particularly successful and resulted in it exceeding its FY 96 targets. Under the Municipal Finance Project, changes in the system of local government finance resulted in increased cost recovery for services directly from users and a 20 percent increase in development budget grants to local governments, the largest single increase in the budget that year. Much of this increase represents funding taken away from central ministries. In addition, elements of a municipal bond market were put in place and preparations for municipalities to use this instrument started. Proceeds from the first municipal bond ever to be issued in Indonesia, and one of the first in the developing world, will be used to finance environmental infrastructure.

G/ENV supported USAID/Indonesia on its PURSE project, which provides the Government of Indonesia and Indonesian local governments with technical advice on the privatization of municipal services, with a focus on the water sector. Assistance was provided to water authorities preparing financial information prior to bond issuance, and on a range of policy issues. In 1996, PURSE gave advice to six local water utilities developing nine projects requiring $1.1 billion in investment. The policy approach to privatization recommended by USAID advisors was approved for implementation by the central government ministries responsible for urban service privatization and incorporated in key pieces of legislation passed in 1996.

In South Africa, G/ENV supported USAID/Pretoria"s policy reform program that resulted in the government calling on the private sector to assist in providing financing for a large share of the housing and urban infrastructure investment called for in the Reconstruction and Development Program. With USAID assistance, the government created the private Mortgage Indemnity Fund (MIF) to insure lenders against political risks of housing lending in formerly redlined poor areas. In 1996, 550 of these areas came under the coverage of the MIF (approximately one-half of all eligible areas), allowing more than 50,000 new housing loans to be made in these neighborhoods alone. By providing UE credit funds to two commercial banks, NEDCOR and First National Bank, USAID facilitated the provision of housing credit to more than 41,000 households with incomes at or below the median. Nonconventional, community-based lenders supported by USAID provided micro-loans and savings programs to low-income clients. One such lender, People"s Dialogue, provided services to 27,000 clients in 1996.

Significant progress was made by the three RUDOs (Central America, South Africa, and India) toward the objectives of *creating self-supporting financing and cost recovery approaches for capital projects*. In Central America, for example, a range of new municipal financing techniques was introduced through the PROMUNI program with the Central American Bank for Economic Integration (CABEI). PROMUNI uses innovative methods for citizen approval and commitment to the repayment of fees from new urban improvements, and has brought the commercial banking sector in Costa Rica and Guatemala into the municipal finance system, making loans for roads, electricity, solid waste, water and wastewater system improvements, etc. Thirty-one loan agreements for $2.4 million in HG funds, leveraged by $1.0 million in CABEI funds, were signed between communities or municipalities and private banks for municipal infrastructure projects in 1996.

b. Expected Progress (FY 97-99) and Management Actions for IR 2.1

For FY 97-99, RUDO staff and Mission DA-funded programs supporting the implementation of the UE Credit Program are expected to make significant strides with host country governments in policy reform and with the private financial sectors in South Africa and India. Other RUDO-assisted countries, such as Indonesia and Poland, are expected to make progress at improving financial management capabilities of utilities and local governments for selected urban environmental services. G/ENV"s recently signed cooperative agreement with PLAN International will assist in furthering the objective of supporting sustainable market-oriented financing mechanisms for shelter and services for the urban poor.

G/ENV will continue to fund a small group of financial advisors to assist RUDOs with achieving their annual targets and medium-term objectives related to this IR. Once the new AID/W team leader for this IR arrives in November, G/ENV will continue to collaborate with the EG center with the objective of blending together the issues in municipal finance and how those affect and are affected by reforms made through the Agency"s capital markets programs.

2. IR 2.2: Improved Urban Management

a. Performance Analysis for IR 2.2

More sustainable urbanization is brought about through management decisions that integrate environmental, social, and economic concerns, especially when allocating public resources. Such decisions are largely dependent on the institutional capacity of host local governments and their relationship with both central counterparts and civil society. IR 2.2 has two broad objectives:

- improving local government institutional capacity to plan and deliver municipal services and improving inter-governmental coordination; and
- increasing public participation in local government decision-making and enhancing public-private partnerships.

In FY 96, six RUDO-assisted countries with municipal development programs made significant progress toward meeting objectives for *improving local governments" institutional capacity and inter-governmental coordination*. Three countries (Honduras, El Salvador, and Indonesia) adopted policies and legislative codes that increased municipal autonomy. Three RUDO-assisted countries (India, Indonesia, and Poland) made significant progress toward meeting their targets to improve municipal capacities in financial management and land and infrastructure project development. In India, pre-feasibility and financial analysis tools for water, sanitation, and solid waste projects were introduced. In Poland, the capital city of Warsaw developed the capacity to do project feasibility studies and local economic development plans. In Indonesia, procedures for environmentally friendly urban planning practices were introduced and then applied nationwide. Pilot planning cities under the Indonesia program were awarded the national "Clean City" award by the President.

Two RUDO-assisted countries made progress toward *improving the inter-governmental revenue transfer formulas*, through the introduction of municipal reforms in fiscal policies at the national level. G/ENV"s municipal twinning program between Mbabane and Durham, North Carolina improved data compilation and introduced state-of-the-art information technology to develop and implement the new revenue transfer formula in Swaziland. This activity also resulted in 30 local government officials, as well as community and NGO representatives, having a better understanding of proven local governance and democratization strategies for better delivery of urban services.

Three of four RUDO-assisted countries *introduced the use of databases on best practices in urban management*, through conferences, seminars, and policy dialogue. In three RUDO-assisted countries (Ecuador, Jamaica, and Indonesia), improved land use planning, which includes disaster management techniques, was introduced in several municipalities, through the development of simple, low-cost retrofitting technologies for shelter, integration of disaster reduction conditionalities into bank lending, and development of municipal emergency systems in selected cities. In Indonesia, the "Project Risk Management" handbook series was adopted by the Government of Indonesia and is being used as the official document for negotiating public-private infrastructure projects.

Finally, all three RUDO-assisted countries with objectives to *strengthen municipal networks* made progress in this regard in FY 96. In Central America, the regional Federation of Municipal

Associations (FEMICA) had a significant impact on policy reform in the region. In Guatemala, it successfully lobbied for a direct transfer of 10 percent of national budget to municipalities. In El Salvador, an accord was signed to delegate functions of the national water authority to the municipal level.

In South America, the Latin America Center for Urban Management (LACUM) is an example of a particularly productive regional municipal network that promotes an integrated approach to urban development. The network brings together mayors, NGOs, and community-based organizations (CBOs) to introduce policy reform in specific countries and training, through disseminating information and strengthening institutional capacity for improved urban management. LACUM manages an intensive agenda of seminars and workshops, encourages policy dialogue, maintains communication with network members, publishes and distributes documents, and conducts policy analysis. In FY 96, LACUM"s interventions resulted in a new regulation passed in Chile to implement the housing-leasing purchase mechanism; a law passed in Argentina introducing trusts; the approval of the use of concessions for public service provisions in Colombia, Peru, Chile, and Argentina; in Colombia, the establishment of gasoline taxes and an expansion of municipalities" credit base by issuing bonds for urban infrastructure activities; the establishment of forums with international organizations, NGOs, municipal training organizations, and regional officials on securitization indexation, infrastructure financing and management, leasing purchase and concessions; and the first international conference held on the future of cities.

In FY 96, four RUDO-assisted countries made progress toward meeting country-specific objectives for *increasing public participation in local government decision-making and enhancing public-private partnerships in RUDO-assisted countries.* In Poland, the city of Lublin reached agreement on a cost-sharing plan between citizens and the local government for infrastructure improvements. The city covers 50 percent of water, sewer, and power lines; 70 percent of the cost of road and sidewalks; and 100 percent of drainage and street. The city also created interdepartmental teams to work with citizens, NGOs, and businesses in two pilot neighborhoods. A public-private partnership to finance and implement the rehabilitation of deteriorated neighborhoods was also instituted.

b. Expected Progress (FY 97-99) and Management Actions for IR2.2

For FY 97-99, G/ENV will continue to dedicate significant staff resources and program funds toward achieving targets for strengthening municipal networks (Asia, Central and South America, Eastern Europe); introducing public-private models of partnership between municipal leaders and citizens (Asia and Southeast Asia); and introducing urban management techniques, such as disaster preparedness and community-based management to local governments (Asia and Eastern Europe). For example, LACUM will work toward creating an electronic network to support its key functions by providing a virtual clearinghouse to exchange and access information, and will support new policy implementation and use of innovative tools and processes, including concessions, local referendums, management contracts, bond issuing, trust contracts, tax reform, tariff systems, and cost recovery for public works. G/ENV will be supporting regional municipal networks that it helped established several years ago in Tunisia (Tunis Regional Network) and will lead the development of a regional municipal network for Asia and Western African municipalities.

In FY 97 and FY 98, G/ENV will build on the success of the municipal twinning programs in South Africa, Bulgaria, and Swaziland by expanding them into a program called the Resource Cities Program. For FY 97, five partnerships will be developed. Subject to funding, five more will be developed in FY 98.

In Washington, G/ENV will continue to work toward increasing coordination with G/DG in the design and implementation of local governance programs. In FY 97, a program of collaboration between the two centers will be developed, which will include a pilot field project and training curricula for AID officers. In FY 98, guidance for design and implementation of local government strengthening programs will be developed.

3. IR 2.3: Reduced Urban and Industrial Pollution

Pollution from urban and industrial sources threatens the health and productivity of urban populations and natural ecosystems, which, in turn, undermines the goal of sustainable development. G/ENV addresses this threat by providing technical leadership and support to Missions and their customers in selected countries through the existing EP3 and the newly initiated Environmental Law Program.

The goal of EP3 is to promote the adoption of clean production policies, practices, and technologies in industry. The law program provides value added to this effort in the areas of policy and regulatory reform. The indicator adopted to measure progress toward this goal is the number of industrial facilities satisfactorily implementing pollution prevention interventions.

a. Performance Analysis for IR 2.3

Results under IR 2.3 in FY 96 exceeded expectations. During this period, G/ENV, in collaboration with Missions in 11 countries, planned to implement pollution prevention activities in 132 industrial facilities. By the end of the fiscal year, a total of 298 facilities were engaged in interventions to control pollution from industrial processes.

As with many quantitative indicators, numbers tell only part of the story. In this particular case, the numbers planned and realized in FY 96 reflect a range of both direct and indirect interventions. For example, direct interventions included the adoption of pollution prevention recommendations that emerged from an actual facility audit. Indirect or secondary interventions included recommendations that were adopted as the result of participation in a clean production workshop or other training activity. One drawback to using a quantitative indicator is the inability to distinguish the impact of the intervention on environmental quality in terms of pollution reduced or production costs lowered.

In qualitative terms, G/ENV"s interventions focus on three substantive areas:

- establishing policy, legal, and regulatory frameworks for pollution prevention;
- introducing best management practices and technologies; and
- building partnerships between governments and industry to promote clean production.

Variations of these interventions are found in each country program and collectively they constitute a critical mass of technical assistance, information sharing, and technology transfer to change the

way key industrial sectors look at environmental protection and the bottom line. The following examples provide a sense of how G/ENV"s interventions in the areas of pollution prevention policy, practices, and partnerships are yielding qualitative results.

- In Peru, the mission used the EP3 mechanism to enlist the support of legal expertise to provide high-level policy assistance to the Ministry of Industry in developing framework legislation that emphasized preventive approaches to waste management and industrial pollution. The regulation will be the first of its kind to be implemented in Latin America.
- In Indonesia, EP3 and the US-Asia Environmental Partnership (US-AEP) core staff conducted a joint scoping mission to evaluate potential policy initiatives that the mission could undertake to increase the effectiveness of its industrial pollution activities. The mission identified a number of near- and longer-term activities to raise awareness and increase the effectiveness of existing programs and recommended placing greater emphasis on initiatives directed at new plants and equipment and at the development of industrial estates. This approach to policy reform will be replicated by core staff from EP3 and the environmental law program in Ecuador and a number of other countries in the LAC region during FY 97.
- In Egypt, EP3 developed a training workshop and manual for Egyptian industry leaders on the relevance and mechanisms of ISO 14001 environmental management standards. The curriculum focused on how to weigh and respond effectively to the challenges posed by the standards. A total of eight training courses were delivered in several cities in Egypt (Cairo, 10th of Ramadan, Port Said, and Alexandria) between October and December 1996. The training courses were attended by approximately 434 industry leaders, consultants, and government officials.
- Throughout FY 96, EP3 worked with many other groups to jointly underwrite activities to leverage resources and share experiences with a broader population of enterprises and interested parties. For example, in FY 96, EP3 co-sponsored a conference with the Texas Natural Resource Conservation Commission (TNRCC) and the Environmental Defense Fund (EDF) in Reynosa, Mexico, entitled "Benefiting from Pollution Prevention and Energy Efficiency: Experiences of the Maquiladora Industry in Reynosa and Matamoros." Also in Mexico, EP3 provided UNIDO"s National Cleaner Production Center with technical experts, planning support, training, and procedures to support their industry assistance activities.

b. Expected Progress (FY 97-99)

Progress in FY 97-99 is expected to remain as targeted. One conditionality to meeting these targets is the need to improve the capacity of EP3"s field offices to capture the number of interventions resulting from training and information-sharing activities. Mechanisms to refine and institutionalize this reporting requirement for each country program will be developed and implemented in FY 97. Targets will be adjusted during this time period as necessary to reflect each country"s success in capturing results.

G/ENV intends to continue to offer technical leadership and support in urban and industrial pollution prevention and mitigation through the development and award of a new "environmental management systems" (EMS) IQC. The concept of EMS represents an evolution of the EP3 program from an initial focus on pollution prevention in industries. The proposed EMS IQC takes a broader and more holistic approach to reducing urban and industrial pollution by providing

missions with expertise to address both municipal and industrial waste streams. This approach will emphasize both prevention and end-of-pipe treatment options for ensuring environmental quality, rather than promoting one alternative at the expense of the other. G/ENV has the resources in-house to develop and manage this IQC.

In addition to the EMS IQC, G/ENV will also support the development of a new RSSA with the Environmental Protection Agency to replace the existing RSSA that expires in FY 96. This exercise will be undertaken in collaboration with the other SSO teams in the Center as well as with the RUDOs and selected missions.

Section III
Strategic Support Objective Three:
More Sustainable Energy Production and Use

Part One: Overview and Factors Affecting Program Performance

C. Overview

The Environment Center promotes the adoption of clean, efficient, and renewable energy production and use in support of the Agency"s environmental, economic growth, and social goals. Energy is critical to agriculture, industry, communications, transportation, and human health. Poverty and gender equity are dramatically affected by energy quality and availability. Yet more than 2 billion rural and urban people lack access to sufficient energy today.

The challenge of providing power to meet this need must be coupled with making energy production and use environmentally sound. The energy sector is responsible for more than one-third of GHG emissions. More than 1.2 billion people live in cities with unacceptable levels of suspended particulate matter arising from fossil fuel combustion, and the World Bank estimates that between 300,000 and 700,000 premature deaths annually could be avoided if particulate matter were reduced.

This year, G/ENV"s SSO3 worked in more than 20 countries in Asia, Africa, and Latin America to build institutional capacity, to strengthen energy policy, and to implement pilot and demonstration projects. These programs led to concrete results, particularly in five key global climate change countries (Brazil, India, Indonesia, Mexico, and the Philippines) and in Central America, where energy is an important aspect of G/CAP"s sustainable development strategy.

SSO3 either achieved or moved substantially toward achievement of the "anticipated results" by pursuing the following three intermediate results:

- IR 3.1 " Increased Energy Efficiency;
- IR 3.2 " Increased Use of Renewable Energy Resources; and
- IR 3.3 " Cleaner Energy Production and Use.

No targets were set at the SSO level in FY 95, so the focus of the R4 this year is on achievement of the "anticipated results" identified for each of the IRs in the FY 95 R4, and on progress in the development of indicators and targets that will be used over the next three to five years to report on results. Overall, SSO3 performed up to expectations as set out in FY 95, and, in certain instances, exceeded anticipated results. A few programs experienced minor delays, which required G/ENV to take adaptive measures.

D. Factors Affecting Program Performance

Performance in FY 96 was affected by three factors " two internal to USAID, the other related to G/ENV"s energy sector development partners.

- SSO3 performance was adversely affected by delays in contracting actions requested by the Energy Office. Although the SSO3 Team prioritized and limited its contracting action requests, some support activities were curtailed and a number of new initiatives postponed because they required contracting actions. G/ENV began its transition to new procurement mechanisms for energy sector service delivery this year. Most of the current primary contracts will expire in FY 97, and the SSO3 team devoted significant effort to beginning to develop the new omnibus energy sector Indefinite Quantity Contracts, which will replace existing contracts for technical assistance and training. The smoothness of the transition and the quality of the support G/ENV receives from the Contracts Office in issuing the new RFP will have an enormous impact on results for FY 97 and FY 98; it is critical that new vehicles come online in a timely manner.
- In FY 96, SSO3 did not receive the bulk of its funds until eight months into the fiscal year; this caused program implementation delays and had a negative impact on reaching anticipated results.
- The capacity of host country governments and multilateral development banks (MDBs) to move forward proved to be a constraint to achievement of some FY 95 objectives. For example, while IR 3.1 " Energy Efficiency began to foster creation of an energy efficiency financing source for Brazil, completion of the task was inhibited by the need to work with the Brazil Government and Brazil financing institutions. While IR 3.1 should ultimately succeed in this efforts, the time frame will be longer than foreseen. Activities under IR 3.2 also suffered as a result of slower-than-anticipated movement by the Government of South Africa in launching a renewable energy program.

Part Two: Progress Toward Objectives

A. Performance Analysis

Because G/ENV"s performance monitoring system was still in a formative stage, the Center assessed progress in FY 96 using a combination of three approaches: 1) by tracking actual results using proposed SSO and IR indicators; 2) by comparing "anticipated results" identified in the FY 95 R4 with the actual results; and 3) by reviewing anecdotal evidence of success or failure. G/ENV made significant progress in defining SSO and IR indicators. As FY 96 targets had only been established for IR 3.2, it is difficult to determine whether expectations were met or exceeded for the SSO and two IRs, although it is clear that SSO3 can highlight substantial anecdotal results that demonstrate movement in the right direction, and follow though in the areas identified as critical in FY 95.

While the approach to SSO3 did not change dramatically over the last year, a focus on determining the best way to achieve the strategic objective and intermediate results did lead to shifts in emphasis that are reflected in the SSO3 indicators. For example, given the declining resources for foreign assistance and the increasing role of the private sector, SSO3 placed greater emphasis on leveraging investment and catalyzing the involvement of partners. SSO3 expanded programs to link U.S. and developing country practitioners, and to leverage and channel private and MDB funding. In parallel,

an indicator for "dollars leveraged" was added. By the end of July 1997, indicators will be refined at the SSO and IR levels, and FY 97 and outyear targets will be established for all indicators.

G/ENV worked with host governments to remove legislative, regulatory, and tariff barriers to clean technology deployment; to create partnerships among a variety of host country institutions and businesses and U.S. counterparts; and to develop the capacity within host country institutions to understand the economic, environmental, and health benefits of clean energy and environmental technologies. G/ENV"s manageable interest in creating a positive investment climate for clean technology centered on two areas: 1) G/ENV"s ability as a representative of the U.S. Government to work with counterpart governments to identify and remove barriers to investment; and 2) G/ENV"s ability to catalyze private sector investment in clean technology. Accordingly, G/ENV began gathering data and testing the efficacy of three indicators to track accomplishments at the SSO level (see indicator tables).

1. SSO3 Indicator 1: Increased Trade and Investment in Clean Energy and Environmental Technology

G/ENV leveraged $2,635,000 in direct partner contributions to USAID projects and catalyzed another $112,034,000 in additional investments from private and MDB funds (see Table 2). In short, for every dollar obligated in core funds, the Center leveraged another $10.26 in commitments for sustainable energy programs. G/ENV"s success in mobilizing investments and engaging partner participation, especially the private sector, reflects solid performance this year for a priority area. Strong private sector collaboration bodes well for the sustainability of G/ENV"s programs, since energy provision is a highly commercial activity. Only private capital markets can command the financial resources needed to increase world energy supply to meet the growing demand, and only the incentives that drive private sector profitability can help ensure efficiency.

Table 2
SSO3 Core and Funds Leveraged in FY 96 ($ millions)

IR	SSO3 CORE	CORE Funds Leveraged			
		Complementary Mission Activities	Partner Funds Leveraged	Investments Catalyzed	Total Funds Leveraged
3.1	3.8	2.9	0.7	82.0	85.5
3.2	3.9	1.3	1.0	10.0	12.4
3.3	3.5	2.3	0.9	20.0	23.3
Total	**11.2**	**6.5**	**2.6**	**112.0**	**121.2**

Notes:

All columns except the last two include monies directly contributed to a G/ENV program. The third column includes funds contributed by non-USAID organizations to G/ENV activities or to projects initiated or substantially supported by G/ENV. The fourth column indicates investments that was stimulated by G/ENV activities.

2. SSO3 Indicator 2: Avoided Greenhouse Gas Emissions

SSO3 activities directly reduced carbon dioxide emissions by 14,255 tons and catalyzed an additional reduction of 2,299,500 tons. The term "avoided" encompasses carbon dioxide emissions averted by improving the operations or efficiency of existing energy infrastructure and by supporting clean renewable energy that replaces the need for fossil fuel-powered systems. The amount of GHG avoided will increase in the coming years as more energy programs come online and pilot programs are replicated. Although reducing net global GHG emissions is one of our goals, it is important to note that G/ENV tentatively chose "avoided GHG emissions" because mitigating the threat of global climate change is outside our manageable interest (see indicator tables for detailed discussion).

3. SSO3 Indicator 3: Market Openness for Energy and Environmental Technology

This indicator is under development. G/ENV plans to establish benchmarks and targets and to report on performance in FY 97. This indicator will use an index that captures the impact of G/ENV efforts to eliminate market barriers and establish a positive investment climate for clean energy and environmental technology. The indicator will measure movement toward creation of markets that do not hinder the flow of environmental goods and services. Progress will be measured toward the elimination of the following seven barriers: legislative, regulatory, subsidy and tariff, financing, human capacity, public awareness, and technology availability.

G/ENV believes there are other measures for judging Global Bureau success. Therefore, for FY 96, the Center also tracked G/ENV contributions to the Global Bureau"s core missions of technical leadership and support.

- **SSO3 responded to requests from 19 Missions and RUDOs for technical assistance and training in ANE, ENI, and LAC.** The energy team provided substantial technical and management assistance to development partners and Missions, which often lacked personnel of their own dedicated to energy and global climate change. In Brazil, G/CAP, and Mexico, where Mission capability in energy and global climate change is limited, G/ENV played a major role in designing and managing the Agency"s energy portfolio. The Center also jointly implemented, with Missions and Regional Bureaus, the Global Climate Change Initiative, the Asia Sustainable Energy Initiative, and the energy component of the Environmental Initiative for the Americas.

  G/ENV"s field support cut across a broad range of activities and sub-sectors, as illustrated in the following list of representative activities:

  - design assistance to USAID/Indonesia"s new energy strategic objective in power sector restructuring and renewable energy;
  - recommendations to strengthen USAID/Egypt"s compressed natural gas-powered bus program;
  - design assistance to USAID/Mexico"s environment and energy efficiency strategies;
  - technical advice to USAID/Sri Lanka on privatizing the power sector and related infra-structure;
  - recommendations for a second phase of USAID/Bangladesh"s rural electrification program;

< evaluation of USAID/Bolivia" s Electrification for Sustainable Development program;

SSO3: More Sustainable Energy Production and Use			
INDICATOR: Dollars leveraged to open markets for clean energy and environmental technology			
UNIT OF MEASURE: U.S. Dollars	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: G/ENV data and tracking			
INDICATOR DESCRIPTION: A direct measure of G/ENV success in catalyzing partner expenditures in support of Agency environmental goals. 1) Useful as a check on the relevance and sustainability of G/ENV efforts to create markets for clean technology. 2) The indicator is reported in two ways: a) partner contributions to USAID projects; and b) investment catalyzed by USAID projects.	1996		$2,635,000 direct $112,034,000 catalyzed
	1997	TBD	
	1998	TBD	
COMMENTS: Includes a five-year $80 million demand side management program implemented by the Mexican utility, CFE. G/ENV" s energy efficiency work in Mexico over the last four years has directly influenced the creation of this program. Projected energy savings over the life of this project are estimated to be 140 MW. Approximately $10 million levered by the G/ENV-supported Environmental Enterprises Assistance Fund to capitalize a Central American environmental investment fund. This figure does not include the tens of millions of dollars spent by renewable energy project developers as a direct result of G/ENV catalytic activity in renewable energy. A $20 million joint venture between a U.S. and Indian firm to manufacture electric vehicles. SSO3 work in electric vehicles was crucial to bringing the two parties together.	1998	TBD	
	1999	TBD	
	2002(T)	TBD	

SSO3: More Sustainable Energy Production and Use			
INDICATOR: Market openness for clean energy and environmental technologies [Proposed]			
UNIT OF MEASURE: movement along a 10-point scale toward market creation (0 = total market barrier; 10 = no constraints)	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: G/ENV data and tracking			
INDICATOR DESCRIPTION: This indicator will seek to capture the impact of G/ENV efforts to eliminate market barriers to the dissemination of clean technology. The indicator will measure movement toward creation of an open market " one that in no way hinders the flow of environmental goods and services. The indicator will measure progress toward the elimination of eight constraints to market creation (legislative, regulatory, subsidies and tariffs, financing, human capacity, public awareness, and technology availability). The goal of this indicator is to capture the full range of G/ENV activities (many of which cannot be translated into quantitative measurements).	1996	TBD	
	1997	TBD	
	1998	TBD	
	1999	TBD	
	2000(T)	TBD	
COMMENTS: This indicator is under construction. Benchmarks and targets will be established during FY 97.			

SSO3: More Sustainable Energy Production and Use			
INDICATOR: GHG emissions avoided			
UNIT OF MEASURE: Tons of carbon equivalent (CTE)/year	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: G/ENV estimates			
INDICATOR DESCRIPTION: A measure of the estimated GHG emissions avoided directly through G/ENV-supported activities.	1996	TBD	4,255 direct 2,299,500 catalyzed
	1997	TBD	
COMMENTS: 1) Reducing the level of global GHG emissions is outside USAID"s manageable interests; however, tracking our direct and catalyzed contributions to avoided emissions is a good proxy for the environmental soundness of our programs. It is noted that this indicator is impossible to measure accurately and can only be estimated. 2) To provide context, total global GHG emissions for 1990 were estimated to be 6 billion tons. 3) GHG emissions avoided is given in two ways: a) emissions avoided by USAID-funded or directly assisted activities; and b) emissions avoided by projects USAID catalyzed.	1998	TBD	
	1999	TBD	
	2002(T)	TBD	

- < support to USAID/Philippines and USAID/Indonesia to develop performance indicators for energy and global climate change; and
- < assistance to USAID/India to reorganize the environment strategic objective.

Praise from a variety of missions for our field support activities reflected positively on performance. This year, we received positive feedback from G/CAP regarding support for development of the private power law and establishment of national Joint Implementation programs; USAID/India, Indonesia, and Philippines for energy training; USAID/Brazil for the environmental technology work of the Environmental Export Council; and USAID/Egypt for facilitating exchanges and creating links with USAID/India energy personnel.

C **More than 2,000 people from host country governments and NGOs participated in 45 technical training programs under the G/ENV-funded Energy Training Project.** Another 1,000 people participated in 20 study tours, executive exchanges, and energy partnerships. Courses were conducted in Central America and 14 countries with Mission co-financing. G/ENV provided development partners with expertise in training needs assessments and assistance in strategic planning, customer surveys, and evaluations in support of all three energy IRs. This year, an independent team of evaluators gave the energy training program high performance ratings.[3] Evaluators found that training programs were innovative, well-structured, and highly customized to respond to the specific needs and interests of each country.

C **SSO3 provided substantial international leadership in sustainable energy.** G/ENV"s intellectual leadership and financial support for renewable, efficient, and clean energy helped position USAID at the forefront in the field of sustainable energy production and use. For example, the MDBs tapped into SSO3 expertise this year in support of several major initiatives.

- < G/ENV helped design and implement the IDB"s Sustainable Markets for Sustainable Energy Initiative, which will help Latin America establish clean energy markets.
- < The International Finance Corporation (IFC) sought Center assistance to design a new loan facility that finances renewable and efficient energy technologies.
- < At the request of the Government of Brazil, G/ENV placed a resident advisor in the country"s national electricity company to provide guidance on implementing a $150 million energy efficiency component of a larger World Bank power sector loan.

SSO3 also helped fulfill U.S. foreign policy objectives and commitments. G/ENV coordinated and helped implement U.S. commitments to the UN Framework Convention on Climate Change by helping developing countries limit the rate of growth in net GHG emissions. SSO3 also supported the dissemination of U.S. energy and environmental technologies under the White House"s National Environmental Technology Strategy. In support of NAFTA, SSO3 facilitated the trans-border trade of electricity and environmental improvement projects. In Central America, the energy team worked closely with G/CAP to promote renewable energy and energy efficiency technologies under the Conjunto CentroAmerica/USA Declaration. Finally, the team helped manage and implement several

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[3] Cairre International, *Using Training Strategically: An Assessment of the Environment Center"s Training (draft),* (Bethesda, MD, 1996), p. II-4.

bilateral environmental agreements, including the U.S.-Brazil and U.S.-India Common Agendas for the Environment.

4. IR 3.1: Increased Energy Efficiency in Key Geographic Areas

a. Performance Analysis

IR 3.1 made significant progress toward achievement of all anticipated results identified in FY 95. G/ENV trained energy planners in demand-side management and integrated resources planning in four countries: India, the Philippines, Mexico, and Brazil. Progress was made toward establishment of an energy efficiency financing mechanism in Brazil. A motor efficiency program is under way in Mexico; it has helped stimulate more than $82 million in commitments to promoting energy efficiency by the Mexican national utility and the private sector. Energy efficiency policies were promulgated with G/ENV assistance in Mexico, the Philippines, India, Brazil, Indonesia, and Guatemala. Finally, a series of studies on financing energy efficiency were completed.

Table 3. IR 3.1: Comparison of Anticipated and Actual Results for FY 96

Anticipated Results (from FY 95 R4)	Actual FY 96 Results
Increased capacity of energy planners in five key countries to utilize demand side management and integrated resource planning to meet increasing energy demand	Training of energy planners in demand-side management and integrated resources planning almost met expectations: training was held in four countries: India, the Philippines, Mexico, and Brazil.
Opening of new mechanisms and dedicated funds for financing energy efficiency in Brazil	Development of an energy efficiency financing mechanism began in FY 96, but was not completed.
Increased motor efficiency in Mexican industry	The motor efficiency program in Mexico is under way, as planned. In addition, the motor efficiency program attracted $2.4 million in private sector funding, and the Mexican government launched its $80 million DSM program.
Incorporation of energy efficiency policies and practices into ongoing energy sector restructuring in Brazil, Indonesia, and Guatemala	Exceeded expectations with the development of energy efficiency policies and practices that are under way in Mexico, the Philippines, India, Brazil, Indonesia, and Guatemala.
Production and dissemination of reports of global interest, including financing for energy efficiency, energy efficiency codes and standards, and energy efficiency success stories	Developed a series of studies on financing energy efficiency rather than creating energy efficiency success stories or reports on codes and standards.

IR3.1 measured its success in FY 96 using two indicators: energy saved and number of policies implemented that promote energy efficiency.

IR 3.1 Indicator 1: Policies Successfully Adopted and/or Implemented

Five significant policies were adopted and/or implemented in FY 96 as a result of G/ENV activities. Four policies and programs were especially noteworthy: passage of new regulations for power sector reform in Guatemala; inception of a demand-side management program by Mexico; adoption of the North American Energy Measurement and Verification Protocol by Brazilian energy savings companies; and adoption of integrated resources planning as a power sector planning tool by the Andra Pradesh State Electricity Board in India.

IR 3.1 Indicator 2: Energy Saved by Adoption of Energy Efficient Policies and Technologies

In FY 96, G/ENV activities helped save 6.2 gigawatts hours of electric energy,[4] 1,300 gigajoules of thermal energy, and 1.5 megawatts of electrical generation capacity (a detailed explanation is provided in the performance table). Corresponding carbon dioxide reductions were 4,755 tons. This measure omits accrued ongoing savings from earlier years and the impacts of policy reform, which form a large share of G/ENV"s program.

While results were measured, baselines were not set for these indicators in FY 95. Therefore, the IR team has limited capacity to determine whether targets were met. IR 3.1"s policy-related achievements were impressive. The impact of IR 3.1 on GHG emissions and energy savings was less significant. The energy efficiency program is heavily focused on policy and regulatory reform and capacity building. Given that emphasis, the current suite of indicators may be too heavily focused on quantitative reductions in energy consumption and GHG emissions. The IR 3.1 Team will refine and finalize its indicators by the end of September 1997; a second indicator to measure the qualitative impacts of the program may be added.

In FY 97, IR 3.1 will focus on removing market barriers to energy efficiency by promoting product standards and labeling and efficiency codes and by fostering the creation of energy efficiency financing mechanisms, measurement protocols, and energy service companies. The program will also continue to help countries create the incentives and the enabling environment for energy efficient investments by "getting the prices right," reducing subsidies, and promoting laws and regulations that combat wasteful energy supply and use. IR 3.1 will need to find a means to capture the catalytic impact of its programs.

FY 96 Highlights of IR 3.1 Results

G/ENV has selected two energy efficiency programs this year to illustrate our long-term approach to achieve results. In Mexico, our modest resources invested in a demonstration project and policy reform culminated this year in a major nationwide energy efficiency program. In India, G/ENV has strategically targeted policy support and training to expand energy production.

G/ENV"s collaboration with the Mexican National Commission for Energy Savings (FIDE) reached a major milestone this year with the **inception of a national $80-million national demand side management (DSM) program**. The new program is financed entirely with Mexican funds (indicating the government"s strong commitment to energy conservation), and is expected to result in a 1-to-3 percent savings in national energy consumption over five years. G/ENV"s $700,000 investment and technical assistance starting in the early 1990s was instrumental in setting the stage for this landmark program.

e gigawatt equals 1,000 megawatts. One megawatt services approximately 5,000 homes in a typical developing country. One gigajoule equals the power derived from eight gallons of gasoline.

IR 3.1: Increased Energy Efficiency in Key Geographic Areas			
INDICATOR: Number of policies implemented to promote energy efficiency			
UNIT OF MEASURE: Number	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: G/ENV/EET" s energy efficiency contractor			
INDICATOR DESCRIPTION: This indicator measures the number of new energy policies/regulations that have been adopted to improve the environment for the development of energy efficiency.	1996		5
	1997	TBD	
	1998	TBD	
COMMENTS: India Completion of an integrated resource plan (IRP) with the Andra Pradesh State Electricity Board that adopts as a 10-year strategy development of sustainable energy. Brazil Adaptation and adoption of the North American Energy Monitoring and Verification Protocol by Brazilian energy service companies. Guatemala Adoption of regulations to implement a sweeping power sector reform. Mexico Demand-side management adopted by national electric utility, CFE, as a policy for meeting electricity demand. Eighty million dollars of local funding is budgeted to implement the policy. Minimum efficiency standards adopted by the National Energy Conservation Agency (CONAE) for motors, pumps, and water heaters leading to a 2-to-5 percent improvement in efficiency.	1999	TBD	
	2002(T)	TBD	

IR 3.1: Increased Energy Efficiency in Key Geographic Areas			
INDICATOR: Electrical generation capacity, electric energy, and thermal energy saved			
UNIT OF MEASURE: Megawatts (MW), Gigawatts (GW), Gigajoules (GJ)	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: Hagler Bailley, Inc.			
INDICATOR DESCRIPTION: This indicator measures megawatts of electrical generation capacity saved, gigawatt/hours of electric energy saved, and gigajoules of thermal energy saved.	1996		Electric energy saved " 6.2 GW Thermal energy saved " 1,300 GJ Electrical generation capacity avoided " 1.5 MW
COMMENTS: 1) Electric energy saved is a measure of demand side (or end use) efficiency. 2) Thermal energy saved is a measure of supply side efficiency, i.e., less fuel is needed to produce the same amount of electricity. 3) Electric generation capacity avoided is a measure of additional generation capacity that did not need to be brought online because of increased efficiency at existing power plants. 4) The cost of installed electric power capacity is about $2 million/MW. One gigawatt equals 1,000 megawatts. One megawatt serves approximately 5,000 homes in a typical developing country. One gigajoule equals the power derived from eight gallons of gasoline.	1997	TBD	
	1998	TBD	
	1999	TBD	
	2002(T)	TBD	

The origin of the program dates back to 1992 when the Center and partners conducted a DSM assessment that found that the greatest efficiency gains could be made in the industrial motor subsector. In Mexico, industrial motors constitute the single largest consumer of energy, utilizing 25 percent of total energy capacity. Following the assessment, the USAID/FIDE team launched a pilot program that became the model for the national DSM program. Under the pilot, 20 firms participated voluntarily in energy efficiency audits and recommended efficiency measures. The pilot was especially successful in attracting financing to replace inefficient motors. To date, several major U.S. manufacturers (including General Electric), FIDE, and the Rockefeller Foundation have committed $2.4 million in low-interest loans to Mexican firms to finance replacement of old motors. As a next step, G/ENV and its partners will embark on a similar pilot project in thermal energy with the objective of launching another major energy efficiency program in the future. G/ENV is promoting similar DSM programs in Brazil, India, and the Philippines.

In India, G/ENV has been working closely with the Mission under the India Private Power Initiative (IPPI). India"s power sector is dominated by poorly managed, highly subsidized, publicly owned power systems. Many systems are nearly bankrupt and users experience frequent blackouts. To solve its critical energy shortage, India has embarked on major reform to attract foreign and local investments in private power. Since 1993, IPPI has supported the government"s effort by providing technical assistance in the legal, regulatory, and financing areas of private power development, combined with training that covers bid solicitation, project appraisal and negotiation, and financial analysis, among other topics.

In FY 96, IPPI played a key role in the creation of a vibrant private power sector that is expected to be instrumental in meeting India"s energy needs. Since the program"s inception, private firms have submitted proposals to construct 131 power plants, totaling 32,557 MW with a value of more than $30 billion. Of these, **five large power deals have now been closed, totaling 2,636 MW, that will provide electricity to industry, agriculture, and households. Three power plants involve U.S. firms and are valued at $1.68 billion**. These power plants will be constructed in accordance with environmental guidelines that incorporate efficient, clean technologies.

IR 3.1: Increased Energy Efficiency in Key Geographic Areas			
INDICATOR: Number of policies implemented to promote energy efficiency			
UNIT OF MEASURE: Number	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: G/ENV/EET"s energy efficiency contractor			
INDICATOR DESCRIPTION: This indicator measures the number of new energy policies/regulations that have been adopted to improve the environment for the development of energy efficiency.	1996		5
	1997	TBD	
	1998	TBD	
COMMENTS: India — Completion of an integrated resource plan (IRP) with the Andra Pradesh State Electricity Board that adopts as a 10-year strategy development of sustainable energy. Brazil — Adaptation and adoption of the North American Energy Monitoring and Verification Protocol by Brazilian energy service companies. Guatemala — Adoption of regulations to implement a sweeping power sector reform. Mexico — Demand-side management adopted by national electric utility, CFE, as a policy for meeting electricity demand. Eighty million dollars of local funding is budgeted to implement the policy. Minimum efficiency standards adopted by the National Energy Conservation Agency (CONAE) for motors, pumps, and water heaters leading to a 2-to-5 percent improvement inefficiency.	1999	TBD	
	2002(T)	TBD	

IR 3.1: Increased Energy Efficiency in Key Geographic Areas			
INDICATOR: Electrical generation capacity, electric energy, and thermal energy saved			
UNIT OF MEASURE: Megawatts (MW), Gigawatts (GW), Gigajoules (GJ)	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: Hagler Bailley, Inc.			
INDICATOR DESCRIPTION: This indicator measures megawatts of electrical generation capacity saved, gigawatt/hours of electric energy saved, and gigajoules of thermal energy saved.	1996		Electric energy saved " 6.2 GW Thermal energy saved " 1,300 GJ Electrical generation capacity avoided " 1.5 MW
COMMENTS: 1) Electric energy saved is a measure of demand side (or end use) efficiency. 2) Thermal energy saved is a measure of supply side efficiency, i.e., less fuel is needed to produce the same amount of electricity. 3) Electric generation capacity avoided is a measure of additional generation capacity that did not need to be brought online because of increased efficiency at existing power plants. 4) The cost of installed electric power capacity is about $2 million/MW. One gigawatt equals 1,000 megawatts. One megawatt serves approximately 5,000 homes in a typical developing country. One gigajoule equals the power derived from eight gallons of gasoline.	1997	TBD	
	1998	TBD	
	1999	TBD	
	2002(T)	TBD	

5. IR 3.2: Increased Use of Renewable Energy Resources

a. Performance Analysis

IR 3.2 made significant progress toward anticipated results identified in the FY 95 R4. Five Renewable Energy Project Support Offices (REPSOs) have been established (in India, the Philippines, Indonesia, Guatemala, and, most recently, Brazil). The long-term goal is to make them self-sustaining local promoters of renewable energy. G/ENV fostered business partnerships involving U.S. and developing country industries, and helped remove legal and institutional barriers to the commercialization of renewable energy. Finally, as demonstrated by the indicators reported on below, 180 households and public facilities received service from renewable energy systems in FY 96 as a result of G/ENV"s efforts.

Table 4. IR 3.2: Comparison of Anticipated and Actual Results for FY 96

Anticipated Results (from FY 95 R4)	Actual FY 96 Results
Creation of Renewable Energy Project Support Offices in key countries (Indonesia, the Philippines, India, Brazil, and Guatemala) staffed by in-country nationals with the technical, commercial, and managerial ability to manage market-oriented RE programs in cooperation with the public and private sectors	Four of the REPSOs (India, the Philippines, Indonesia, and Guatemala) had been established prior to 1996 and the Brazil REPSO was successfully established in 1996. The Indonesia REPSO was re-constituted under a different Indonesian NGO, and productivity increased.
Creation of business partnerships between U.S. and host country firms for the widespread commercialization of renewable energy	Through market building activities, approximately 10 partnerships were created.
Removal of legal and other institutional constraints to commercialization of renewable energy	Provided substantial input into the development of a Peruvian geothermal law, the first power purchase agreement for small hydro in India, and a reduction in photovoltaic tariffs in Sri Lanka.
Measurable progress in providing RE-related services to increasing numbers of people in USAID-assisted countries, especially those living in rural and remote areas	Delivered renewable energy services to 180 households.

IR 3.2 now has two indicators it uses to judge success at the IR level. The 1996 target for one of those indicators was nearly reached (90 percent). Results under the other indicator fell significantly short because of a delay by an important partner. Nonetheless, the prognosis for success in the second category is such that five-year targets have actually been raised.

IR 3.2 Indicator 1: Megawatts of Larger-Scale Renewable Energy Systems Installed

The target for 1996 was 100 MW (five-year target of 530 MW); 90 MW came on line, which will avoid approximately 450,000 tons of carbon dioxide emissions per year and service a city of 500,000 households and enterprises. Cumulatively, from 1989 to 1996, G/ENV activities led to the installation of 360 MW of renewable energy systems in wind, small hydro, and biomass. These larger-scale systems feed electricity into national or regional electricity grids that serve industry, commerce, agriculture, and household connected to those grids. Often G/ENV-supported renewable energy projects are the first of their kind in a country; therefore, replication is an anticipated goal.

G/ENV rarely finances project construction or installation. Rather, the Center funds activities to establish the enabling conditions for the commercialization of renewable energy. Usually, a time lag of several years exists from initial G/ENV involvement to when the project actually delivers electricity. There is currently a pipeline of projects G/ENV supported at earlier stages, so the five-year target for this indicator is still realistic.

IR 3.2 Indicator 2: Number of Houses, Businesses, or Public Services Served by Small-Scale Renewable Systems

From 1989 to 1996, G/ENV activities supported a very limited number of pilot projects to supply solar- or wind-powered electricity with small-scale systems in four countries. The target for 1996 was 1,000 systems. Results obtained in 1996 were 180 rural home electricity systems and four community water-pumping facilities. This was short of the target because the Government of South Africa proceeded more slowly than anticipated. That program will come online in FY 97 and FY 98. Nonetheless, opportunities for helping leverage large World Bank loans has led the IR team to increase the five-year target from 35,000 to 250,000 small-scale systems.

Cumulatively in this category, from 1989 through 1996, G/ENV activities led to the installation of small-scale systems for 2,730 rural households, 6 rural schools, 2 health clinics, 1 national environmental ministry, 1 national health ministry, and 7 community water-pumping facilities. Small-scale systems are typically 50 watts (households) to 1 kilowatts (community water pumping) and serve individual users not connected to national or regional grids.

IR 3.2: Increased Use of Renewable Energy Resources			
INDICATOR: Megawatts of larger-scale renewable energy systems installed			
UNIT OF MEASURE: Megawatts	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: IR 3.2 cooperators			
INDICATOR DESCRIPTION: This indicator measures the generating capacity of new large-scale renewable energy systems that came online as a result of the catalytic role IR 3.2"s activities played.	1996	Total of 530 MW by the year 2000	74 MW direct 16 MW leveraged
	1997		
COMMENTS: To provide context, 1 MW will provide electric power to a community of about 5,000 residents in a developing country. Don Pedro Small Hydro, Costa Rica (16 MW) Windfarm, Costa Rica (20 MW) Co-Generation additions, India (54 MW)	1998		
	1999		
	2000		

IR 3.2: Increased Use of Renewable Energy Resources			
INDICATOR: Number of houses, businesses, or public services served by small-scale renewable energy systems			
UNIT OF MEASURE: Number	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: IR 3.2 cooperators		Total of 250,000 by the year 2000	
INDICATOR DESCRIPTION: This indicator will measure the number of households, businesses, and public centers that are not currently on the electricity grid that are electrified using small, renewable energy systems.	1996		180 leveraged
	1997		
COMMENTS: 180 SHS installed by Solar Foundation in Guatemala 2,700 systems scheduled for installation in FY 96 in Namibia and South Africa are behind schedule and will be installed in FY 97.	1998		
	1999		
	2000		

FY96 Highlights of IR 3.2 Results

Selected highlights for renewable energy this year illustrate USAID"s role in introducing new technologies and financing mechanisms that serve as models for replication by the private sector, host-country governments, and MDBs.

The inauguration of Latin America"s first commercial windfarm in Costa Rica was a major achievement this year for IR 3.2. This 20 MW wind-energy plant, which sells the electricity to the national grid, is privately owned and operated by the U.S. firm, Kennetech. The $25 million facility, which produces about two percent of the country"s generating capacity, is a model for Costa Rica

and the rest of Latin America. The Costa Rican national utility has already signed contracts to install another 40 MW facility on a neighboring site within two years. To obtain this result, SSO3 invested approximately $110,000 in the early 1990s through its cooperators, including Winrock and the U.S. Export Council for Renewable Energy (US/ECRE), to provide assistance to draft the law that legalized power generation by the private sector; to bring Costa Rican decision-makers to a U.S. wind-energy workshop for training; and to conduct a pre-feasibility study at the first windfarm site. This first windfarm allowed Costa Rica to avoid installation of a power plant that would have operated on fossil fuels. It also was among the first projects recognized as pilot joint implementation projects under the U.S. Initiative on Joint Implementation.

With regard to small-scale systems, **G/ENV"s program in the Dominican Republic deserves attention because it launched the world"s first leasing program for solar home systems**. Although installation of the small-scale systems occurred prior to 1996, it was during last year that the results of the program gained worldwide attention. Soluz, a U.S.-Dominican company, began leasing solar home systems to 750 households in early 1995. In 1996, it reported a 100 percent payment record. A study revealed that more than half of all rural households in the Dominican Republic could afford the systems, an astonishing breakthrough considering that more than 1 billion rural people in developing countries lack access to electricity. SSO3 helped launch the Environmental Enterprises Assistance Fund (EEAF), the non-profit investment company that provided investment capital for the Dominican Republic program. SSO3 provided EEAF with its original funds for core staff salaries and travel when the organization was formed in 1991. We have continued to provide such core support through the years.

EEAF has also gained significant MDB support for renewable energy. In 1996, the Multilateral Investment Fund, which is affiliated with the IDB, agreed to extend a $4.8 million line of credit to EEAF to establish an investment fund for Central America. EEAF provided a one-for-one match with funds raised by other sources. The new fund will invest in small- and medium-sized renewable energy and environmental companies. In addition, the IFC has named the EEAF as one of several fund managers for its $150 million Renewable Energy and Energy Efficiency Fund, which will begin operations in late 1997. **EEAF has succeeded in becoming self-sufficient. FY 97 is the last year in which G/ENV will provide core support.**

6. IR 3.3: Cleaner Energy Production and Use

a. Performance Analysis

IR 3.3 achieved or exceeded all of the anticipated results that were identified in the FY 95 R4. Advanced combustion technology was deployed in Manzanillo, Mexico. A study of factors affecting trans-border wheeling was completed; the impact was greater than expected as Mexico"s national utility issued a competitive bid to purchase electricity from the U.S. Eight business partnerships involving U.S. and developing countries were established. Two partnerships involving regulatory agencies were established. A U.S.-Indian joint venture for production of electric vehicles was catalyzed in India. Finally, training to promote private power production was provided in six countries and one region (India, Indonesia, the Philippines, Brazil, Ghana, Egypt, and Central America).

Table 5. IR 3.3: Comparison of Anticipated and Actual Results for FY 96

Anticipated Results (from FY 95 R4)	Actual FY 96 Results
Deployment of advanced combustion technology and fabric filter system on one stack of an oil-fired power plant in Manzanillo, Mexico	Deployed advanced combustion technology in Manzanillo, Mexico; however, it was decided not to install the fabric filter until further discussion with CFE are held.
Study of economic and regulatory factors affecting the sale of electricity between southwestern U.S. utilities and Mexican counterparts	A study of factors affecting trans-border power wheeling was completed; its impact was greater than expected as Mexico" s national utility issued a competitive bid to purchase electricity from the U.S.
Creation of business partnerships between U.S. and national industries for private power production and for cleaner energy use in the transportation sector	Eight business partnerships involving U.S. and developing countries were established. Two partnerships pairing regulatory agencies were set up. Additionally, a joint venture for production of electric vehicles was catalyzed in India.
Increased institutional capacity to promote private power production in key countries	Training to promote private power production was provided in six countries and a region: India, Indonesia, the Philippines, Brazil, Ghana, Egypt, and Central America.

IR 3.3 has two indicators that it is using for the first time in FY 96: dollars leveraged and GHG emissions avoided.

IR 3.3 Indicator 1: Funds Leveraged from Non-USAID Sources

This indicator is a good proxy for sustainability, since energy infrastructure is capital-intensive and international donors cannot guarantee the sustainability of any energy program without significant long-term private sector involvement. IR 3.3 leveraged $20.9 million in non-USAID sources from $3.7 million in investment, nearly a sixfold return. These leveraged funds originated from the private sector in Brazil, India, and Mexico, and demonstrated a high degree of private sector participation in SSO3 ventures.

IR 3.3 Indicator 2: Avoided Pollutants and GHG Emissions

This indicator is a proxy measure for the environmental benefits achieved by cleaner energy production and use. IR 3.3 activities averted 9,500 tons of carbon dioxide emissions in FY 96, mostly from the Manzanillo power plant, which is described below.

IR 3.3: Cleaner Energy Production and Use			
INDICATOR: Dollars leveraged from non-USAID sources			
UNIT OF MEASURE: Dollars	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: IR 3.3 cooperators			
INDICATOR DESCRIPTION: This indicator measures dollars leveraged from non-USAID sources on IR 3.3 projects.	1996		$920,000 direct $20,034,000 leveraged
COMMENTS: This indicator is a good proxy for sustainability, since energy infrastructure is capital-intensive and donors cannot guarantee sustainability of any energy program without significant long-term involvement of the private sector.	1997	TBD	
	1998	TBD	
	1999	TBD	
	2002(T)	TBD	

IR 3.3: Cleaner Energy Production and Use			
INDICATOR: Avoided pollutants and GHG emissions			
UNIT OF MEASURE: Tons of carbon dioxide	**YEAR**	**PLANNED**	**ACTUAL**
SOURCE: IR 3.3 Contractor			
INDICATOR DESCRIPTION: This indicator measures greenhouse gases and other pollutants that are avoided as a result of this IR"s work.	1996		9,500 tons
	1997	TBD	
COMMENTS: This indicator is a proxy measure for the environmental benefits achieved by cleaner energy production and use. Manzanillo " 9,400 tons Electric vehicle fleet in Bangkok " 100 tons	1998	TBD	
	1999	TBD	
	2000	TBD	

FY96 Highlights of IR 3.3 Results

Three successful activities under IR 3.3 demonstrate the approaches used to promote cleaner energy production and use. They show how a combination of efforts to bring U.S. and developing country players together, and to build bottom-up support while providing technical guidance to policy-makers, can foster environmental improvement and investment.

In FY 96, SSO3"s partnership with the Mexican national utility and U.S. companies reached a major benchmark with the full installation of an advanced technology to reduce the emission of air pollution at the Manzanillo power plant. This six-stack, 1900 MW oil-fired power plant, which produces 10 percent of Mexico"s electrical capacity, generated high plumes of particulate-filled smoke visible to local communities miles away. The plume risked harming the local tourist industry. After years of close collaboration with partners " the Salt River Project (an Arizona-based utility), Electric Power Technologies (a California-based firm), and Mexico"s Federal Electricity Commission " SSO3 achieved measurable improvements in air quality. Our $450,000 investment facilitated the adaption and installation of an advanced emissions reduction and combustion technology called REACH in one of the six stacks. Following installation, plant officials noted dramatic results in improved combustion efficiency and air quality. **Over the course of a year, the technology will be responsible for an estimated 9,400-ton reduction of carbon dioxide emissions and about $300,000 in saved fuel costs.** If REACH were used on all heavy-oil fired plants in Mexico, 315,000 tons of carbon dioxide emissions could be avoided per year.

SSO3"s activities in India in FY 96 demonstrated the Center"s ability to leverage substantial funding for promising ideas that could profitably help clean up the smog-filled streets of major cities. G/ENV joined with USAID/India and U.S. and Indian firms to launch demonstration projects replacing highly polluting, three-wheeled auto-rickshaws with cleaner vehicles. At the centerpiece, USAID fostered the creation of the Maini-Amerigon Car Company, a joint venture between Indian and U.S. firms, to develop an electric vehicle for the Indian domestic market. Thus far, **G/ENV has leveraged $20.0 million from its $500,000 investment, a 40-fold return**.

In FY 96, the SSO3-supported Energy Partnership Program (EPP) established 10 partnerships involving U.S. and developing country electric utilities and regulatory commissions. The two-year partnerships establish cooperative relationships that transfer U.S. experience with private sector, market-based energy production, transmission, distribution, and regulation. For every dollar of USAID funding, partners have contributed another two dollars. This ratio will rise to 1:3 in FY 97. In 1996, utility partners expended almost $500,000 of their funds on partnership activities (55 percent from developing country utilities and 45 percent from U.S. utilities). USAID partnership program expenses were about $250,000. A partnership between Bombay Suburban Electric Supply Limited of India and New York"s Niagara Mohawk Power Corporation illustrates the benefits of these alliances. To improve distribution of electricity and reduce distribution losses, the Bombay utility adopted a computerized information management system that Niagara Mohawk recommended following a meeting of technical experts. The new system will increase the efficiency of the power distribution system in the entire city by 1-2 percent over the next two years. Similar partnerships have been formed between utilities in California, Florida, Georgia, New York, Pennsylvania, and Texas, with host country counterparts in India, Indonesia, and the Philippines. In FY 97, the program will help form partnerships in Egypt, Ghana, and Senegal.

B. Contributions by Partners to Performance

Results in FY 96 reflect the high priority that SSO3 placed on collaborating with its development partners and customers at all levels. The Center demonstrated results in building the capacity of customers in the field, which included policy-makers and representatives from energy utilities, communities, and the private sector. In addition, the team coordinated its activities with an array of development partners, including MDBs, the United Nations, the Intergovernmental Panel on Climate Change, environmental and energy NGOs, and U.S. government agencies, manufacturers, trade associations, and research institutions. Comments from the director of USAID"s environment program in India attest to the value of our assistance to development partners and customers:

> "I want to take a minute to present the compliments and appreciation of USAID/India, the Government of India, and the Ministry of Power to the Energy Training Program [ETP] of G/ENV. . . The workshop [supported under ETP] was the latest in a string of six courses implemented as part of the India Private Power Initiative [IPPI] " a true collaboration between Global, USAID/India, the Government of India, and Private Power Developers. IPPI has been an outstanding success. U.S. and Indian private power developers have recently told me about the impact IPPI training and TA has made on the ability of the State Electricity Boards" staff to understand the very complex "security packages" and non-recourse financing arrangements that are part and parcel of private power projects. The Ministry of Non-Conventional Energy Sources has asked for its own IPPI to deal with renewable energy after seeing what was being accomplished under IPPI. That request was made personally to me by the Minister. He didn"t ask for a trip to Bangkok, didn"t ask for a jeep, and didn"t ask for computers! He wanted TA, training, and policy support. . . Those of us in India salute these efforts."

C. Expected Progress through FY 99

SSO3 expects to make significant progress in FY 97 on several fronts. Critically important will be the establishment of new contracting vehicles for technical experts in all aspects of energy sector management. Development of the new contracting began in FY 96 and will have to be concluded no later than the end of FY 97 if SSO3" s management contract is to be fulfilled.

In FY 97, SSO3 will strive to expand its programs of assistance and collaboration with Missions and Regional Bureaus for ENI and AFR. Though G/ENV has some activities in those geographic areas, they are far more limited than programs for ANE and LAC.

SSO3 looks forward to expanding its efforts to transfer lessons learned and replicate programs from one country or region to others. This is an area in which the Global Bureau has the potential to add value to bilateral programs and to accelerate global learning about effective interventions to promote more sustainable energy production and use.

Individual IRs will focus on tailoring and strengthening programs to meet the natural evolution of the sector. IR 3.1 will focus on removing market barriers to energy efficiency and creating the incentives and the enabling environment for energy efficient investments. IR 3.2 will continue to promote the increased use of commercially viable renewable energy options in key countries. This will be accomplished through efforts in legislative and policy reform, training and information dissemination, market building, and stimulating project financing. IR 3.3 will complement its efforts to stimulate individual programs and partnerships with programs to help create markets for clean energy and environmental technology. These programs will work more broadly with U.S. and developing country industry to drive market development. IR 3.3 will also expand efforts to increase the role of U.S. energy and environment sector stakeholders in promoting development abroad. Efforts to pair U.S. and host country utilities will be broadened to involve regulators, trade associations, and individual firms. This should help increase private partner participation in G/ENV programs and catalyze investments.

PART 3
STATUS OF MANAGEMENT CONTRACT

Status of Management Contract

The Environment Center"s management contract with the Global Bureau provisionally approved all three Center Strategic Objectives on May 3, 1996. Within the next few months, the Center plans to propose addition of a Special Strategic Objective related to the Agency goal of "Global Climate Change Threat Reduced." No other changes to the Center results framework or strategic are anticipated.

The FY 95 R4 Management Contract included agreements on three management concerns:

- need to bring to closure issues surrounding the Strategic Support Objective model and the ability to capture G/ENV"s unique value added;
- need to identify indicators to which the Center can hold itself accountable; and
- need to provide an addendum to the FY 95 R4 that addresses any issues related to the implementation of requirement under 22 CFR 216.

Discussion of Management Concerns

Strategic Support Objectives: The Center finds that the definition of Strategic Support Objective does not capture the full range of technical leadership and global program implementation responsibilities that are important elements of our responsibilities. As we originally proposed in our 1995 Strategic Plan, we prefer to use the term "Shared Strategic Objective" to describe our highest-level results, and request that the Agency give careful consideration to adopting this more appropriate term.

Indicators: We have included indicators and performance data tables for 24 results. We are committed to having a final performance monitoring plan by September 30, 1997.

Reg 216: We have included as an attachment to this R4 an addendum to the FY 95 R4 addressing this concern.

Addendum A

The Center for the Environment: FY96 Contribution to Agency Goals and Objectives, US Foreign Policy Initiatives and Global Bureau Development Initiatives

This addendum provides additional information on the Center for the Environment"s results for FY96 to aid the Technical Review Committee in scoring G/ENV's R4. The addendum describes G/ENV"s contributions to the achievement Agency goals and objectives, U.S. foreign policy initiatives, and Global Bureau development initiatives.

G/ENV contributed to all Agency environmental objectives and sustainable development goals this year, as shown in Table A-1. Detailed discussion on how individual SSO results contributed to the Agency"s goals and objectives follows below.

Table A-1
Contribution of G/ENV SSOs to Agency Goals

G/ENV SSO	Contribution to:	
	Agency Environmental Objectives	**Agency Sustainable Development Goals**
SSO 1: Increased and Improved Protection and Sustainable Use of Natural Resources	" Biodiversity Conserved " Global Climate Change Threat Reduced " Sustainable Natural Resources Management	" Democracies Built " Broad-Based Economic Growth Achieved
SSO 2: Sustainable Urbanization and Pollution Prevented	" Urbanization Sustained and Pollution Prevented	" Human Health Protected " Broad-Based Economic Growth Achieved " Democracies Built " Lives Saved, Suffering Reduced, and Development Potential Reinforced
SSO 3: More Sustainable Energy Production and Use	" Global Climate Change Threat Reduced " Provision of Environmentally Sound Energy Services	" Human Health Protected " Broad-Based Economic Growth Achieved

I. SSO 1 Increased and Improved Protection and Sustainable Use of Natural Resources

A. Agency Goals and Objectives

The Environment Center"s SSO 1 directly and substantially supports the Agency goal to protect the environment through three of five Agency environment objectives:

- **Biodiversity conservation**: In FY 96, SSO 1 managed $16 million or fully one-third of the Agency"s biodiversity funding. G/ENV and its cooperators provided most of the technical assistance in preparing the Agency"s Biodiversity Strategy and Policy and provided much of the Agency"s technical leadership and innovation on biodiversity conservation, including enterprise and community-based approaches to conservation.
- **Reduced threat of climate change**: G/ENV supported the development of techniques for measuring the carbon sequestered by different land use systems. Our forestry program also promoted proven technologies that reduce the impact of forestry and provide alternatives to slash and burn agriculture, both of which substantially diminish carbon dioxide emissions from forests.
- **Sustainable natural resources management**: In FY96, G/ENV managed $6 million in cooperation with key missions, national governments and community stakeholders to improve the conservation and sustainable use of forests, water and coastal resources. Implementation focused on increasing public awareness and decision-maker understanding of natural resource use conflicts and issues; supporting enabling national policies and more effective policy implementation at local levels; and helping communities and local organizations adopt practices which foster sustainable management of natural resources.

G/ENV also directly and substantially supports the two Agency strategic goals:

- **Broad-based economic growth:** G/ENV supports natural resources-based enterprise development, especially in areas where communities are rarely served by traditional development activities. By promoting the sustainable management of natural resources, G/ENV programs also help provide the foundation for sustainable national economic growth.
- **Democracy and governance**: Strengthening local community groups and NGOs and supporting policies that devolve authority over local resources are important intermediate results for G/ENV and directly support the Agency"s democracy and governance goal.

B. SSO 1 Contributions to United States Government Foreign Policy Objectives

The Center"s SSO 1 responds directly to Section 118 (tropical forests) and 119 (biological diversity) of the Foreign Assistance Act. In addition, G/ENV actively participates in and provides technical assistance to a number of United States Government foreign policy initiatives, including the Convention on International Trade in Endangered Species, the Convention on Biodiversity, the Convention on Desertification, the World Conservation Union, the Inter-Governmental Panel on Forests, RAMSAR, the International Timber Trade Organization, and the International Coral Reef Initiative.

C. SSO 1 Contributions to Development Initiatives

1. Sectoral Considerations

a. Field Demand for G/ENV Services

As shown in Table A-2 below, field demand for G/ENV services remained strong during FY 96. Despite Agency-wide budget reductions, the demand for G/ENV services, as indicated by the level of OYB and buy-in to Center-supported activities, exceeded core funding by factor of 2.5:1. This leverage ratio increases to nearly a 6:1 ratio when total funds directly leveraged by G/ENV activities (shown in the fourth column) are considered.

Table A-2
Estimated Levering of G/ENV SSO1 Core Funds
($millions)

IR/SSO	G/ENV SSO 1 Core Funds	Mission OYB/Buy-in	Other Mission Funds Leveraged	Partner Funds Leveraged	Total Field Demand*
1.1 Biodiversity	4.0	12.3	n.a.	16.5	32.8
1.2 Forestry	1.0	0.4	n.a.	3.2	4.6
1.3 Env. Ed.	0.8	2.8	n.a.	1.5	5.1
1.4 Coastal	1.2	1.5	n.a.	2.0	4.7
SSO Total	7.0	17.0	n.a.	23.2	40.2

* Total field demand is the sum of Mission buy-ins, other Mission funds leveraged, and partner funds leveraged.

b. Need within the Sector

Evidence of SSO 1 Team"s successful fulfillment of Mission needs include:

- IR 1.1 -- The Team has received very positive feedback based on our timely and useful technical assistance, including our mid-term review of the Philippines community forestry program, development of a Mexico environmental strategy, and development of performance indicators for the Philippines and Indonesia Missions.
- IR 1.2 -- USAID/Indonesia commended G/ENV for its support in securing a government policy shift to grant tenure to smallholders for reclaiming degraded lands. USAID/Nepal commended the Team for its remote sensing work to monitor a community forestry program. The World Bank commended G/ENV for developing methodologies for monitoring carbon sequestration in forestry and agroforestry systems.
- IR 1.3 -- A recent mid-term evaluation provided feedback from Mission staff in Ecuador, the Gambia, El Salvador, and the Africa Regional Bureau commending GreenCom for the quality of the services provided and responsiveness of core staff.
- IR 1.4 -- This Team"s work has received numerous Mission commendations, among others, from Indonesia for its work in developing the coastal component of Mission"s NRM II project, from Mexico for developing a coastal resources component of the Missions strategy, and from

Tanzania for its assessment of coastal management needs and priorities as part of the Mission"s emerging environment strategic objective.

2. Global Bureau Initiatives

a. SSO 1 Technical Leadership: SSO 1 takes its responsibility for technical leadership very seriously, as demonstrated by its work with the Agency"s Biodiversity Strategy and Policy, applied research and development, and support for international fora. Some additional examples of the Team"s technical leadership include:

- Performance monitoring--The SSO Team has developed practical performance indicators for programs in Indonesia, the Philippines, East Africa, Sri Lanka, and Mexico;
- Best practices--Prepared and distributed a series of best practice guides including: a primer on conserving biodiversity in logging areas; a coastal resources management toolkit; and numerous EE&C methods and tools mentioned above;
- Developing networks of environmental managers--such as a network of CIFOR, Tropical Forests Foundation, US Forest Service, and FAO to work with Missions, national forestry institutions and NGOs to integrate research, demonstration, and training programs on reduced-impact harvesting and the network supported by the Center"s Biodiversity Conservation Network that links 100 partners in micro-enterprise development based on natural products; and
- Communications--The SSO Team supported the publication of newsletters, web sites, and other outreach tools for communicating messages, supporting environment and natural resources managers throughout the world. For example, over 5,000 customers in some 130 countries have received coastal technical materials and over 2,000 people have received EE&C materials from G/ENV.

b. Research[5]

G/ENV continues to lead the Agency"s environmental research program by supporting an active program of basic and applied research working in partnership with some of the leading international environment research institutions. Highlights of this program include:

- The Biodiversity Conservation Network is conducting applied research into the conditions that enable successful community-based enterprise approaches to conservation;
- By funding catalytic research grant the SSO Team has helped set the research agendas at the CIFOR and ICRAF in reduced impact timber harvesting and alternatives to slash and burn agriculture, two topics of special interest to USAID missions;
- In support of the Agency"s global climate change strategy, the SSO Team has supported the development and testing of methods to measure carbon sequestration and the maintenance of carbon sinks on five forest land use type in four countries;
- The SSO Team is supporting the linkage of research with policy formulation and development decision making. For example in the Gulf of Aqaba, the Team supports an activity that links scientists, managers and planners in monitoring health of the Gulf"s pristine coral reefs that attract increasing numbers of international tourists; and

The Center"s research plan lays out three major themes: (1) guiding the research agenda of organizations better equipped and funded to conduct basic research; (2) ıtions or applied research of testing new approaches and technologies in field situations; and (3) dissemination of research results.

- The Team is supporting an effort by our partner, the University of Rhode Island, to develop, test and apply a common methodology for learning from integrated coastal management experience worldwide.

3. Quality of Development Partnerships

The SSO 1 Team supports a number of strong and mature partnerships. We have had long-term cooperative agreements with leading US non-profit and governmental agencies in our sector. Examples of our partnerships include:

- A sophisticated participatory approach to develop the Agency"s Biodiversity Strategy and Policy. This involved scientists, Mission environmental staff, our cooperators and host country nationals both in the US and in the LAC region to identify and prioritize areas and action for USAID and other donor support.
- The SSO Team"s EE&C activities uses a partnership approach that is unique for environmental management, by reaching out to media, churches, schools and other information multipliers to build consensus about environmental issues as well as needs and possibilities for action;
- Finally, the quality of a G/ENV cooperator"s approach to partnership with customers is reflected in the following quote from a coastal project manager in Ecuador:

  "I was most pleased with the new relations in technical assistance with the Coastal Resources Center. It"s very different in my experience, because in Latin America you gather the information, identify the problems and then write a paper with the solutions and give it to the people. Now we work together to find solutions. It is possible to work with a new perspective, including developing a relationship between several levels of the people affected. That is very important. It is impossible to put together a process or find solutions without all of them."

II. SSO 2 Sustainable Urbanization and Pollution Prevented

A. Agency Goals and Objectives

Over the last 30 years, the Office of Urban Programs within G/ENV has built a strategic framework for promoting sustainable urbanization. Specific examples of SSO 2 contribution to date to the Agency"s strategic goals, including both grants and loans, are:

- **Protecting the Environment:** SSO2 TA and UE loan programs have introduced sound environmental practices such as environmental risk assessment tools, energy and water resources conservation, as well as reduced emissions of greenhouse gases.
- **Protecting Human Health and Child Survival:** improving municipal services such as potable water supply and sanitation have reduced morbidity and mortality, as have the reduction of lead emissions from vehicles;
- **Encouraging Broad-based Economic Growth**: urban infrastructure services and low-income housing are essential to encouraging the growth of the private sector, (including microenterprises) ensuring the productivity and public health of the workforce, and contributing to more positive environmental outcomes from the urban development process. The use of the UE loan has expanded the demand for long-term capital financing for urban investment purposes and led to increased attention to the need for capital market development and private financing of urban environmental services;

- **Building Democracy**: strengthening local governments" capacity to manage urban growth and increasing their autonomy to deliver services based on citizen input, are key to stable urban governance.
- **Providing Humanitarian Assistance and Aiding Post-Crisis Transitions:** SSO2's urban disaster mitigation and preparedness programs have been instrumental in reducing risk of man-made and natural disasters in urban areas.

SSO 2 programs also explicitly support Agency objectives to foster new partnerships and support women in development.

B. Foreign Policy Objectives

In FY 96, SSO2 provided unique support to the Administration"s foreign policy objectives in a number of arenas. G/ENV played a lead role in the Second United Nations Global Conference on Human Settlements (Habitat II) held in Istanbul, July 1996. USAID"s leadership within the USG and among the world"s nations resulted in the drafting of a Global Action Plan which emphasizes sustainable urbanization by promoting appropriate health, democratic, economic, and environmental actions in cities in the developed and developing world. This GPA represents significant advances in promoting decentralization, enabling environments for public participation and economic development, and for improved environmental management of urban areas, including an agreement to support the phase-out of lead in gasoline.

SSO2's Urban Environmental (UE) Credit Program (formerly the Housing Guaranty Program) was used strategically to leverage domestic private resources and capital flows from other donors and host countries, and to assist in USAID"s exit from selected countries. The Czech Republic, Tunisia and Chile are three examples of countries in which USAID used the UE credit program to phase out its Development Assistance (DA) programs. All of these programs yielded significant results in terms of access to infrastructure and housing and development and implementation of policy reforms required to leave a sustainable system of financing in place.

C. Contributions to Development Initiatives

1. Sectoral Considerations

a. Field Demand for G/ENV SSO2 Services

When judging SSO2 field demand, it is important to recognize the difference between it and other Global Bureau SSOs and USAID/W operating units. The SSO2 team places the bulk of its senior technical staff in the field. Washington staff provide leadership, advice, information, and small amounts of core funding. With the exception of the EP3 and the International City Management Association contracts, UP does not have core/buy-in contracts although it established an IQC mechanism with a half a dozen qualified contractors which are available to all Missions.

The level of OYB and buy-in to SSO2-supported activities exceeded core funding by a factor of 5:1. RUDO-managed bilateral strategic objectives exceeded $40 million. Total UE loan authorizations were above $80 million.

Table A-3
Estimated Funding Levels of Sustainable Urbanization Activities
Receiving Substantial SSO 2 Technical Support
($millions)

SSO	Core Funds	OYB/Buy-in	HG Loans	Mission Funds Leveraged	Partner Funds Leveraged	Total Field Demand
SSO Total	5.4	2.1	81.9	40.3	N/A	124.3

b. Need within the Sector

Despite a 25 percent reduction in OE budget in FY96, demand for RUDO services remained high. Missions were highly complimentary of senior RUDO officers implementing large multi-million dollar and Mission grant portfolios. SSO2 team staff in Washington assisted regional bureaus with designing local governance programs, and received high marks for their contributions. AAAS fellows on the team traveled extensively, doing repeat visits to Missions requiring specialized expertise in water or environmental law.

2. Global Bureau Initiatives

a. Technical Leadership

G/ENV"s technical leadership under SSO2 is demonstrated by its substantial support preceding and during the Second U.N. Conference on Human Settlements (Habitat II) held in Istanbul, Turkey in June of 1996. Habitat II resulted in a global plan of action to address the problems of urban development, *The Habitat Agenda*. G/ENV support to Habitat II resulted in FY96:

- collection of urban and housing sector indicators for National Plans of Action in 20 countries;
- establishment of the first set of baseline data ever collected on housing and urban indicators. This program has continued and now there are near 300 cities that have provided data to the Habitat Secretariat;
- assistance to actively engage NGOs in the Habitat preparatory process. USAID provided funding for key groups of NGOs from developing countries to have access and be present in planning meetings for the global preparatory process;
- joint funding with the US Department of Housing and Urban Development for a series of 10 town meetings throughout the US to discuss global urban development issues and the relationships to US urban problems resulting in a shared understanding, knowledge, contacts and expertise of common urban problems and approached between the NGOs that USAID works with overseas and domestically-focused US NGO partners of HUD.

G/ENV"s technical leadership in the area of finance resulted in the organization of several seminars on capital markets for infrastructure and municipal bond financing; designs and evaluations of selected UE and DA- supported programs (Central America, Morocco, Indonesia);

and training of municipal finance officials. The SSO2 team"s leadership on urban management and municipal decentralization issues provided strong support to PPC"s New Partnership Initiative and Participation Working Group. A senior SSO2 team leader was the Center"s representative on the NPI Learning Team. SSO2 is the leader in the Agency on urban disaster mitigation and preparedness, assisting BHR"s OFDA program in the field.

b. Research

G/ENV has built and maintained a knowledge base on the urban environment and management based on USAID"s field programs which offers a living laboratory for learning from locally led developments. Highlights of this program include:

- During FY 96, the Center guided field research agendas through two workshops on public/private partnerships and privatization in municipal solid waste management in low income countries. Two USAID advisors prepared and lead sessions on planning and management tools for public private partnerships, regulatory arrangements, and contracting guidelines for collection services. The 35 participants included specialists and professionals from public and private sectors, consultants, external support agencies, and research institutions engaged in promoting, and formulating a structured strategy for sustainable public private sector partnerships in solid waste management. Over 500 copies of the workshop"s report were distributed and sent to the participants as well as to specialists around the world.

- G/ENV"s SSO2 and SSO 3 (Energy) Teams supported a workshop for USAID experts and other specialists to explore the feasibility of converting municipal waste to energy and its importance as a potential source of revenue for financing local governments. The workshop helped develop agendas for further exploration and development to address issues on conversion of municipal solid waste to energy and shared information of potential applicability of technology options in the United States at AID assisted countries. The approximately 150 participants included USAID, World Bank, US Department of Energy, EPA, and representatives from the private sector.

3. Quality of Development Partnerships

The Center"s SSO2 is on the cutting edge of development partnerships. We are leading the way in recognizing the importance of local governance as often a critically neglected partner for the Agency"s sustainable development programs. This includes bringing together government and private sector firms and local NGOs to work together in addressing urban issues. The SSO2 Team has long been a leader in leveraging commercial sources of financing in support of activities planned with USAID support. And we have provided Agency leadership in support for local advocacy, women"s action groups to become involved in key urban management decision-making and action. A few examples of different types of partnerships include:

- The **India Indicators Program** was a collaborative venture between different tiers of the urban hierarchy (national, state and local governments), public/private partnerships, government, the Society for Development Studies and international collaboration with UNCHS.

- The **Sustainable Cities Initiative** projects started in FY95, are based on tripartite partnerships between local government, business, and citizens and NGOs. During 1996 in Jamaica, businesses provided funds and management for the provision of urban services in the downtown Kingston area. In India under the Green Partnerships Project, citizens designed urban forestry plots along side municipal governments. In Haiti, a community developed a communications strategy and water management system in Cite Soleil. In Morocco, a community in Fez created an action plan, monitoring system, and local committee for solid waste management to improve the collection and disposal of neighborhood wastes.

The SSO2 Team also practices what is preached in terms of high quality partnerships. As discussed above, we have very close relationships with Missions where SSO staff and RUDOs have been placed for long-term assignment. We have established good working relationships with partners in PHN and D&G Centers as well as Regional Bureaus. The Urban Team also co-manages with the SSO 1 the Water Team, one of the Center"s more active cross-cutting planning and coordination groups.

III. More Sustainable Energy Production and Use

A. Agency Goals and Objectives

SSO 3 works with more than twenty countries in Asia, Africa and Latin America to foster environmentally sound energy sector development. By building human and institutional capacity, providing technical assistance, promoting policy and regulatory reform and implementing pilot and demonstration projects, the Center promotes cleaner and more efficient energy production and use. These activities directly contribute to three Agency goals:

- **Protecting the Environment**: G/ENV's energy sector work has a direct, positive impact on the environment. Increased energy efficiency and the use of clean and renewable energy technologies can allow countries to provide energy services without augmenting greenhouse gas emissions or adversely affecting human health. The delivery of electricity can decrease deforestation and the loss of biodiversity.
- **Encouraging Broad-based Economic Growth:** In many developing countries the energy sector can account for 40 percent of government expenditures. Despite this level of public investment, insufficient energy often constrains industrial production and microenterprise development. Facilitating and encouraging private investment can free-up scarce public funds for debt reduction and social investment. It can also increase the quantity, quality and reliability of energy supplies while creating opportunities for U.S. and host country private investment.
- **Protecting human health and child survival**: In addition to the 1.2 billion people that breathe unhealthy air in cities, smoke contributes to acute respiratory infections that kill some 4 million infants and children per year. G/ENV energy sector programs help countries shift towards cleaner fuel sources, promote cleaner forms of transportation, and decrease the pollution resulting from fossil fuel combustion, and diminish human health risks that result from poor landfill management.

B. Foreign Policy Objectives

SSO3 plays a lead role in fulfilling the U.S. commitment to the UN Framework Convention on Climate Change by helping developing countries limit the rate of growth in net greenhouse gas

emissions. SSO3 also supports the dissemination of U.S. energy and environmental technologies under the White House"s National Environmental Technology Strategy. Regionally, SSO3 contributes to several trade and environmental initiatives, including the Asia Sustainable Energy Initiative and the Environmental Initiative for the Americas. In support of NAFTA, SSO3 facilitates the trans-border trade of electricity and environmental improvement projects. In Central America, the energy team works closely with G/CAP to promote renewable energy and energy efficiency technologies under the Conjunto CentroAmerica/USA Declaration. The team also helps manage and implement several bilateral environmental agreements, such as the U.S.-Brazil and U.S.-India Common Agendas for the Environment.

C. Contribution To Development Initiatives

1. Sectoral Considerations

a. Field Demand

Field demand for G/ENV energy services, an indicator of our success in meeting Agency field support needs, was very strong in FY96. We responded to requests from 19 Missions and RUDOs for technical assistance and training in Bangladesh, Bolivia, Brazil, Dominican Republic, Ecuador, Egypt, El Salvador, G-CAP, Ghana, Guatemala, India, Indonesia, Kazakstan, Mexico, Mongolia, Morocco, Nepal, Philippines, and Sri Lanka. As Table A-4 shows, G/ENV"s core funding of $11.2 million leveraged $121.2 million in Mission, partner funding, and investments by others (private funds and MDBs). In short, for every dollar spent in core funds, the Center leveraged another $10.82 for SSO3 programs and initiatives.

Table A-4 - SSO3 Core and Leveraged Funds in FY96 ($million)

IR	CORE	CORE Funds Leveraged			
		Complementary Mission Activities	Partner Funds Leveraged	Investments Catalyzed	Total Funds Leveraged
3.1	3.8	2.9	0.7	$ 82.0 "	$ 85.5
3.2	3.9	1.3	1.0	$ 10.0 *	$ 12.4
3.3	3.5	2.3	0.9	$ 20.0**	$ 23.3
Total	**11.2**	**6.5**	**2.6**	**$ 112.0**	**$ 121.2**

Note: All columns except the last two include monies directly contributed to a G/ENV program. The third column includes funds contributed by non-USAID organizations to G/ENV activities or to projects initiated or substantially supported by G/ENV. The fourth column indicates investments stimulated by G/ENV activities. " Includes a five-year $80 million demand side management program implemented by the Mexican utility, CFE. G/ENV's energy efficiency work in Mexico over the last four years has directly influenced the creation of this program. Projected energy savings over the life of this project are estimated to be 140 MW. * This includes approximately $10 million levered by the G/ENV-supported Environmental Enterprises Assistance Fund to capitalize a Central American environmental investment fund. This figure does not include the tens of millions of dollars spent by renewable energy project developers as a direct result of G/ENV catalytic activity in renewable energy. ** This includes a $20,000,000 joint venture between a U.S. and Indian firm to manufacture electric vehicles. G/ENV work in electric vehicles was crucial to bringing the two parties together.

b. Need within Sector

High field demand for SSO3 services reflected our role as USAID"s repository for global experience in energy and global climate change. The energy team provided substantial technical

and management assistance to development partners and Missions, which often lacked personnel of their own dedicated to energy and global climate change. G/ENV also provided contracting mechanisms for Missions to access experts from the Center"s extensive network of specialists, trainers, NGOs, trade associations and private firms. G/ENV support fell into three categories:

- **Technical assistance to Missions.** The nature of G/ENV"s technical assistance to Missions varied widely, as exemplified by this representative list of FY96 activities:
  - design assistance to USAID/Indonesia"s new energy strategic objective in power sector restructuring and renewable energy;
  - evaluation of USAID/Bolivia"s Electrification for Sustainable Development program;
  - recommendations to strengthen USAID/Egypt"s compressed natural gas bus program;
  - design assistance to USAID/Mexico"s environment and energy efficiency strategies;
  - technical advice to USAID/Sri Lanka on privatizing the power sector and related infrastructure;
  - recommendations for a second phase of USAID/Bangladesh"s rural electrification program;
  - support to USAID/Philippines and USAID/Indonesia to develop performance indicators for energy and global climate change; and
  - assistance to USAID/India to reorganize the environment strategic objective.
- **Management assistance for program implementation**. In Brazil, G/CAP, and Mexico, where Mission capability in energy and global climate change is limited, G/ENV played a major role in designing and managing the Agency"s energy portfolio. The Center also jointly implemented the Global Climate Change Initiative, the Asia Sustainable Energy Initiative, and the energy component of the Environmental Initiative for the Americas with Missions and Regional Bureaus.
- **Training and information dissemination.** Training programs were designed as a cross-cutting tool to support all three energy IRs, without which G/ENV technical assistance and financing would be ineffective for lack of in-country human resource capacity. G/ENV provided development partners with expertise in training needs assessments and assistance in strategic planning, customer surveys, and evaluations. In FY96, all technical training courses were offered as field support, funded by Missions. More than 2,000 customers from a broad cross-section of host country governments and non-governmental organizations participated in 45 technical training programs under the Energy Training Project, which G/ENV funds. Another 1,000 people participated in 20 study tours, executive exchanges, or energy partnerships. Courses were conducted in Central American and 14 countries: Brazil, Dominican Republic, Ecuador, Egypt, Ghana, Guatemala, India, Indonesia, Jamaica, Mexico, Mongolia, Panama, Peru, and the Philippines.

  An independent team of evaluators gave ETP high performance ratings. Evaluators found that ETP programs were innovative, well structured, and highly customized to respond to the specific needs and interests in each country. In addition, the evaluators determined that project managers were experienced trainers with a clear understanding of how to use training effectively for institutional development.

G/ENV assistance to Missions, development partners, and customers have complimented for its responsiveness and high quality service. Recently, for example, the G/CAP Mission Director praised G/ENV"s efforts in implementing Central American energy activities,

"I would like to note the excellent support we are receiving from the Global Bureau"s Energy Office...Region-wide energy development activities involve numerous countries, governments, NGOs, and U.S.-based consultants, which make coordination challenging. But this challenge is being met, thanks to the energetic and conscientious efforts of Energy Office personnel. We would like to express our thanks to the very able support we are receiving."

Other Missions have extended their appreciation to G/ENV this year:

- G/CAP regarding support for development of the private power law and establishment of national Joint Implementation programs;
- USAID/India, Indonesia, and Philippines for energy training;
- USAID/Brazil for environmental technology work of the Environmental Export Council; and
- USAID/Egypt for facilitating exchanges and creating links with USAID/India energy personnel.

2. Global Initiatives

a. Research

G/ENV conducted technical and policy research to develop new technologies and tools suited to developing countries. Below are illustrations of the kinds of research G/ENV supported:

- G/ENV and cooperators initiated one study to determine the viability of using sugar cane trash as an energy source and another study to assess the feasibility of applying high-efficiency gasification and advanced gas turbine systems to produce power from sugar cane residue. If effective, these technologies would increase the generating capacity and efficiency of sugar mills.
- A G/ENV study developed a conceptual model for the World Bank to integrate the damage caused by the release of atmospheric carbon into its cost/benefit analysis. Based on the study, the Bank is conducting a retrospective analysis of 100 energy loans to determine the impact of carbon damage on their cost/benefit ratios.

G/ENV also maintained close contact with U.S. research institutions to make findings and technologies available to developing countries. It disseminated these findings and stimulated discussion through networks it established to link energy professionals in the U.S. and key countries via the internet. In addition, Center publications, which are highlighted below, informed the development community of findings from Agency research and field activities.

- *Characterization of Landfill Sites in Brazil for Landfill Gas Recovery*;
- *Electric Vehicle Investment Opportunities in India;*
- *Environmental Markets in Central America;*
- *Environmental Markets in Indonesia;*
- *Final Report - Thailand Tuk-Tuk Electric Vehicle Demonstration Project;*
- *Final Report - Study on Legal and Regulatory Factors Affecting Cross-Border Trade in Electricity Between Mexico and the United States*;
- *Financing Capability of Indian Institutions to Provide Alternatives to Sovereign Guarantees:*
- *Minimum Debt Financing Requirements for Private Power Projects in India*;
- *Mining the Urban Waste Stream for Energy: Options, Technological Limitations, and Lessons from the Field*;

- *Private Power Business Opportunities: Central America;*
- *Standards and Labeling: The Philippines" Residential Air Conditioner Program*; and
- *Strategies for Financing Energy Efficiency*.

b. Technical Leadership

The energy team has made several major contributions to the field of sustainable energy over the last twenty years. In the 1980s, centrally-funded staff helped position USAID as leader in establishing public-private sector partnerships for energy restructuring. Since then, the donor community has come to view Agency" s approaches in brokering these partnerships as models for their own energy programs. With major intellectual and financial support from G/ENV, the Agency continued to exercise leadership in several SSO3 areas:

- **Clean, renewable, and efficient energy systems.** USAID was the first donor to promote renewable, efficient, and clean energy systems in developing countries. The MDBs, which increasingly are integrating social and environmental sustainability concerns into their energy programs, have continued to tap into USAID expertise this year:
  - G/ENV helped design and implement the IDB" s Sustainable Markets for Sustainable Energy Initiative, which will help Latin America establish clean energy markets.
  - The IFC sought Center assistance to design a new loan facility that finances renewable and efficient energy technologies.
  - At the request of the Government of Brazil, G/ENV placed a resident advisor in the country" s national electricity company to provide guidance on implementing a $150 million energy efficiency component of a larger World Bank power sector loan.
- **Creating U.S. - host country partnerships.** G/ENV continued to be at the forefront in establishing partnerships between developing country and U.S. regulators and firms. Some of the most productive meetings occurred when policy makers from developing countries met with their U.S. partners to resolve specific problems. This year, the Center facilitated more than 20 partnerships.
- **Linking environmental and social sustainability with energy production.** Most recently, G/ENV began examining the linkages between private power and environmental and social issues. The team is exploring the relationship between deforestation and energy sector policy, including an analysis of how these linkages relate to traditional fuels and urban energy. In Guatemala, G/ENV integrated several early lessons learned into the design and implementation of a USAID program to provide electricity to rural communities in support of that country" s new peace plan.

3. Quality of Development Partnerships

Results in FY96 reflect the high priority that G/ENV placed on collaborating with its development partners and customers at all levels. The Center demonstrated results in building the capacity of customers in the field, which included representatives from energy utilities, policy makers, the private sector, and communities. In addition, the team coordinated its activities with an array of development partners, including the MDBs, the United Nations, the Intergovernmental Panel on Climate Change, environmental and energy NGOs, and U.S. government agencies, manufacturers, trade associations, and research institutions. Comments from the director of USAID" s environment program in India attest to the value of our assistance to development partners and customers,

"I want to take a minute to present the compliments and appreciation of USAID/India, the Government of India, and the Ministry of Power to the Energy Training Program (ETP) of G/ENV... The workshop [supported under ETP] was the latest in a string of six courses implemented as part of the India Private Power Initiative (IPPI) -- a true collaboration between Global, USAID India, the Government of India, and Private Power Developers. IPPI has been an outstanding success. US and Indian private power developers have recently told me about the impact IPPI training and TA has made on the ability of the State Electricity Boards" staff to understand the very complex "security packages" and non-recourse financing arrangements that are part and parcel of private power projects. The Ministry of Non-Conventional Energy Sources has asked for its own IPPI to deal with renewable energy after seeing what was being accomplished under IPPI. That request was made personally to me by the Minister. He didn"t ask for a trip to Bangkok, didn"t ask for a jeep, and didn"t ask for computers! He wanted TA, training, and policy support...Those of us in India salute these efforts."

Addendum B

G/ENV Support for G Bureau Environmental Compliance Procedures

Environmental Procedures
USAID's environmental review procedures are mandated by statute, Federal Regulation and Executive Order. Environmental review procedures, according to USAID policy, are basic to the design of any program, activity, or amendment, and when needed, require appropriate mitigative measures or activity redesign to ensure environmental stability. Title 22 of the Code of Federal Regulations, Part 216 [22 CFR 216], dated October 9, 1980, embraces USAID's environmental procedures.

Responsibilities for meeting the requirements and objectives of the Agency's environmental procedures are similar to those for other USAID bureaus in that Operating Unit Directors and/or designated representatives must clear and sign Initial Environmental Examinations (IEEs), and, if necessary, Scoping Statements, Environmental Assessments (EAs) and Environmental Impact Statements (EISs). Furthermore, each Strategic Objective Team is responsible for compliance with all requirements of 22 CFR 216 as a fundamental element in its approaches and internal procedures for achieving its strategic objective. Results Package Teams, which often have the primary responsibility for activity compliance, must a) ensure that adequate time is allowed during the design process to conduct all necessary environmental studies/evaluations required under 22 CFR 216, b) allow for public participation and comment, c) provide each document to the Bureau Environmental Officer (EO) for review and clearance, and d) allow for incorporating final decisions into final designs. Finally, each program, activity or amendment must be monitored and evaluated for compliance with 22 CFR 216.

The Bureau for Global Programs, Field Support and Research EO, who functions from the G/ENV/ENG (Office of Capital Projects and Engineering), provides professional assistance on the programmatic and regulatory aspects of urban and/or industrial pollution prevention and abatement and environmental analysis related to regional and country activity portfolios in USAID program countries. Particular attention is given to compliance with the provisions of 22 CFR 216 and to technical assistance on environmental protection matters in those countries' portfolios. The EO collaborates extensively with technical staff of the Global Bureau Office of Environment and Urban Programs (G/ENV/UP), the Office of Environment and Natural Resources (G/ENV/ENR), the Office of Energy, Environment and Technology (G/ENV/EET), the Global Bureau Centers for Democracy & Governance (G/DG), Economic Growth (G/EG), Population, Health & Nutrition (G/PHN), Human Capacity Development (G/HCD), and, finally, the Office of Women in Development (WID), as well as country desk officers, field Mission Environmental Officers (MEOs), and contractors.

The EO provides technical support to Global Bureau program planning, activity design and implementation, and related actions in matters involving environmental protection and support of FAA Section 118, "Environment and Natural Resources."

The EO also provides primary technical backstopping support for activities related to compliance

with provisions of 22 CFR 216, including, in particular, environmental assessment of capital infrastructure activities, implementation of USAID pesticide procedures, and activities involving urban and industrial pollution prevention and control, industrial health and safety, solid waste management, energy technology, and toxic/hazardous materials. The EO initiates activities with USAID/W offices and field missions to identify, develop, and evaluate activities/programs that will assist host government and private sector entities in the protection and promotion of public and occupational safety and environmental health.

The EO further provides environmental review, as a member of interagency review committees, of proposed multilateral development bank activities regarding the Pelosi Amendment to the International Financial Institutions Act. The function is coordinated by Treasury and involves both State and USAID.